VSP 628PRO

USER MANUAL

RGBlink

CONTENTS

Thank you for choosing our product!

This User Manual is designed to show you how to use this video processor quickly and make use of all the features. Please read all directions and instructions carefully before using this product.

Declarations
FCC/Warranty

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

RGBlink provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGBlink must be informed immediately in writing of any complains.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other service provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGBlink.

If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by RGBlink either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions

For all VSP 628PRO processor installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment.
To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power Cord.
The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening VSP 628PRO processor shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative.

Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

The environment in which you install your VSP 628PRO should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Chapter 1 Your Product

1.1 In the Box

AC Power Cord	USB Cable	DVI-D Cable	SDI Cable

VGA to YPbPr (Component) Adapter	Warranty Card & USB Files	Screw Driver	Antistatic Bag

Sender Card Holder	QC Declaration
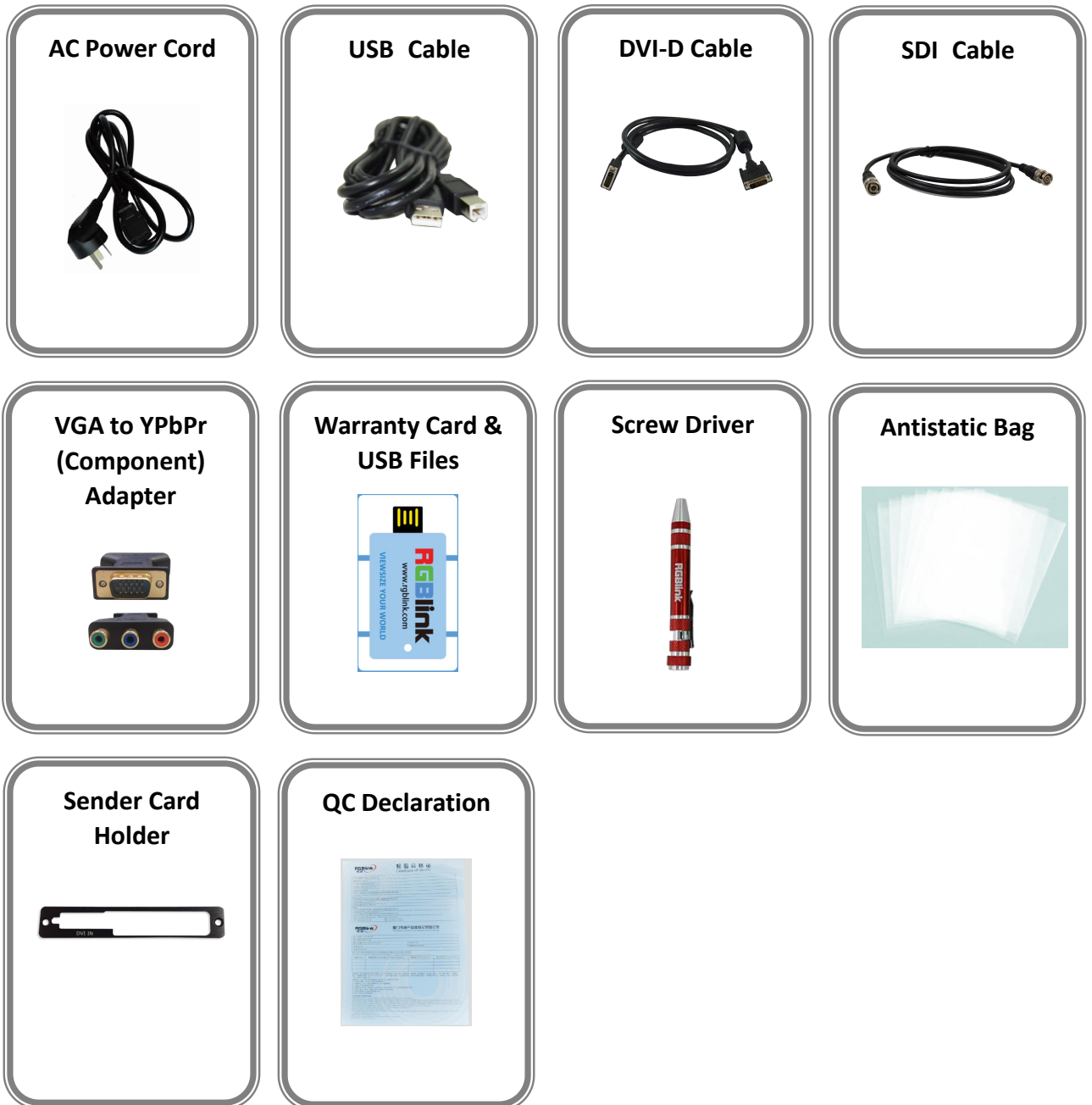
Note:

SDI cable supplied only when SDI Output module is factory fitted.

AC Power Cable supplied as standard according to destination market.

USB is contained on the Warranty/Registration Card. Please keep.

1.2 Product Overview

The new standard in presentation switching, VSP 628PRO is so much more than a seamless switcher.

With multiple output modes, this video processor is very flexible solution across a range of application whether for scaling, presentation switching, 2K and 4K distribution or broadcast.

True two channel design enables this power enabling VSP 628PRO to operate in Standard (PIP) mode, Switcher Mode, Dual 2K Mode, Split mode or MinDelay mode.

Truly an All-in-One solution, VSP 628PRO accepts a wide range of input signals in a huge array of formats. Inputs can be converted, scaled, transcoded to standard DVI/HDMI outputs or output to optional ports including 3G-SDI, HDBaseT and FiberPort.

VSP 628PRO packs in a host of professional features including broadcasting Genlock and EDID management as standard. For superior visual performance, on board processing is 12bit allow fine control for Noise Reduction, Brightness, Contrast, and Saturation from the RGBlink rendering engine.

A range of additional input options are available including additional 3G-SDI ports (there are already two 3G-SDI with loop as standard), USB direct input.

VSP 628PRO supports output of modern 2K high resolution standards up to 2560x816@60Hz. In addition to a wide range of standard output resolutions, VSP 628PRO offers entirely user customisable output resolutions for the ultimate in control.

1.2.1 Back Panel
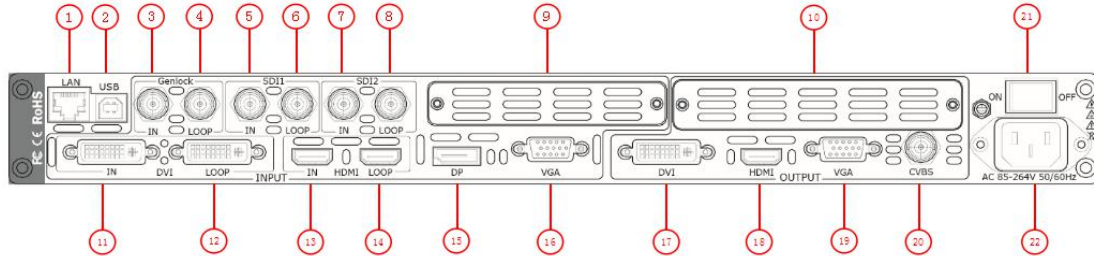
Input Connectors

3	**BNC – Genlock** Standard Genlock signals can input.
5. 7	**BNC – 3G-SDI** Standard 3G-SDI signals can input.
11	**DVI-I – DVI** Standard DVI signals can input. The DVI port supports up to HDMI 1.3 if the port format is set to HDMI.
13	**HDMI-A – HDMI** Standard Genlock signals can input.
15	**DP** Standard DisplayPort signals can input.
16	**DB15 – VGA** Standard VGA signals can input. Additionally this VGA port supports Component (YPbPr) with the use of a VGA to Component adapter (supplied).

Output Connectors

4	**BNC – Genlock Loop Out** Connect to the Genlock input of the next VSP 628PRO or the device with Genlock input.
6. 8	**BNC – 3G-SDI Loop Out** Connect to the SDI input of the next VSP 628PRO or the device with SDI input.
12	**DVI-I – DVI Loop Out** Connect to the DVI input of the next VSP 628PRO or the device with DVI input.
14	**HDMI-A – HDMI Loop Out** Connect to the HDMI input of the next VSP 628PRO or the device with HDMI input.
17	**DVI-I – DVI** Connect to the monitor or LED display which has DVI interface. (This connector does not support hotplug).
18	**HDMI-A – HDMI** Connect to the display device, video processor or matrix.

19	**DB15 – VGA** Connect to the monitor or LED display which has VGA interface. (This connector does not support hotplug).
20	**BNC – CVBS** Output PAL and NTSC, and connect to the TV, etc.

Control Connectors

1	**RJ45 – Ethernet** Connect to Ethernet work for remote control by Windows software.
6. 8	**USB-B – USB** Connect to Ethernet work for remote control by Windows software and for product firmware upgrades.

Power Connection

21	**Power Switch** Illuminated power switch.
22	**IEC – Power Input** Main power input AC 85-264V Max 45W.

Option Slots

9	**Input Option Slots** Range of inputs are available for user fitting. Refer to Product Input Options
10	**Sender Card/Output Option Slots** Either a Sender Card or Output option can be installed in this slot. Support sender Card types including Linsn, Nova and Colorlight (sold separately). Refer to Product Sender Cards A range of output options are available for user fitting. Refer to Product Output Options

1.2.2 Front Panel
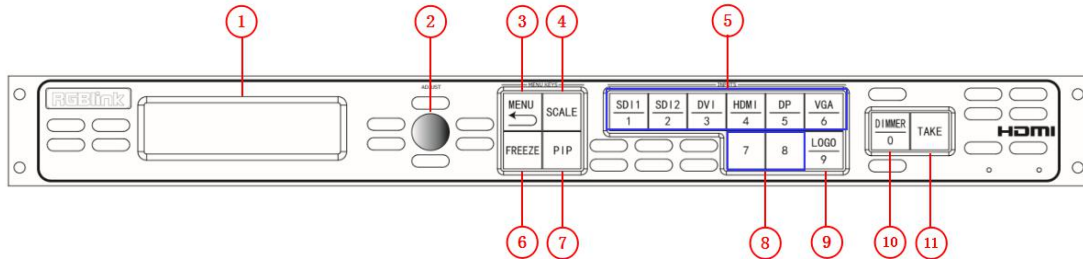
Display

1	**OLED Display** Displays current status of the product, and for feature selections provides interactive choices in conjunction with buttons on the front panel.

Multi-Function Buttons

2	**Rotary Button** This button used for menu selections and confirmation. The button is both rotary (turn to left and right), and push-button (confirm selection)

Illuminated Buttons

3	**MENU Button** This button used for menu selections – refer to Understanding the MENU Structure. Push the button again will return to the last level menu or exit the menu. Push the button for 3 seconds will lock the front panel.
4	**SCALE Button** This button used for size and position adjusting.
5	**Dedicated Signal Buttons** For each of inputs on the back panel a dedicated backlit buttons are provided. When lit, the signal is selected for use, when red light is flashing, signal is in preview or the signal is not available. Additionally, each button is numbered and can be used as direct number entry when values such as resolution and size.
6	**FREEZE Button** This button used for freezing the image.
7	**PIP Button** This button used for single and double image switching. Additionally this button reused for DSK shortkey if enable the DSK function.
8	**Optional Signal Buttons** If optional input module is fitted, then these two buttons operate as per Dedicated Signal Buttons above. Additionally these buttons are used for direct numeric entry for numbers 7/8.

9	**LOGO Button**
	When lit is use as configured from the menu for a captured logo/image or a test pattern.
	Additionally this button is used for direct numeric entry for numbers 9.
10	**DIMMER Button**
	This button used for dimmer and effects adjusting, also for CHA and CHB selection.
	Additionally this button is used for direct numeric entry for number 0.
11	**TAKE Button**
	This button used for seamless effect switching.
	Additionally this button reused for load function except in switcher mode.

1.2.3 Dimension

Following is the dimension of VSP 628PRO for your reference:
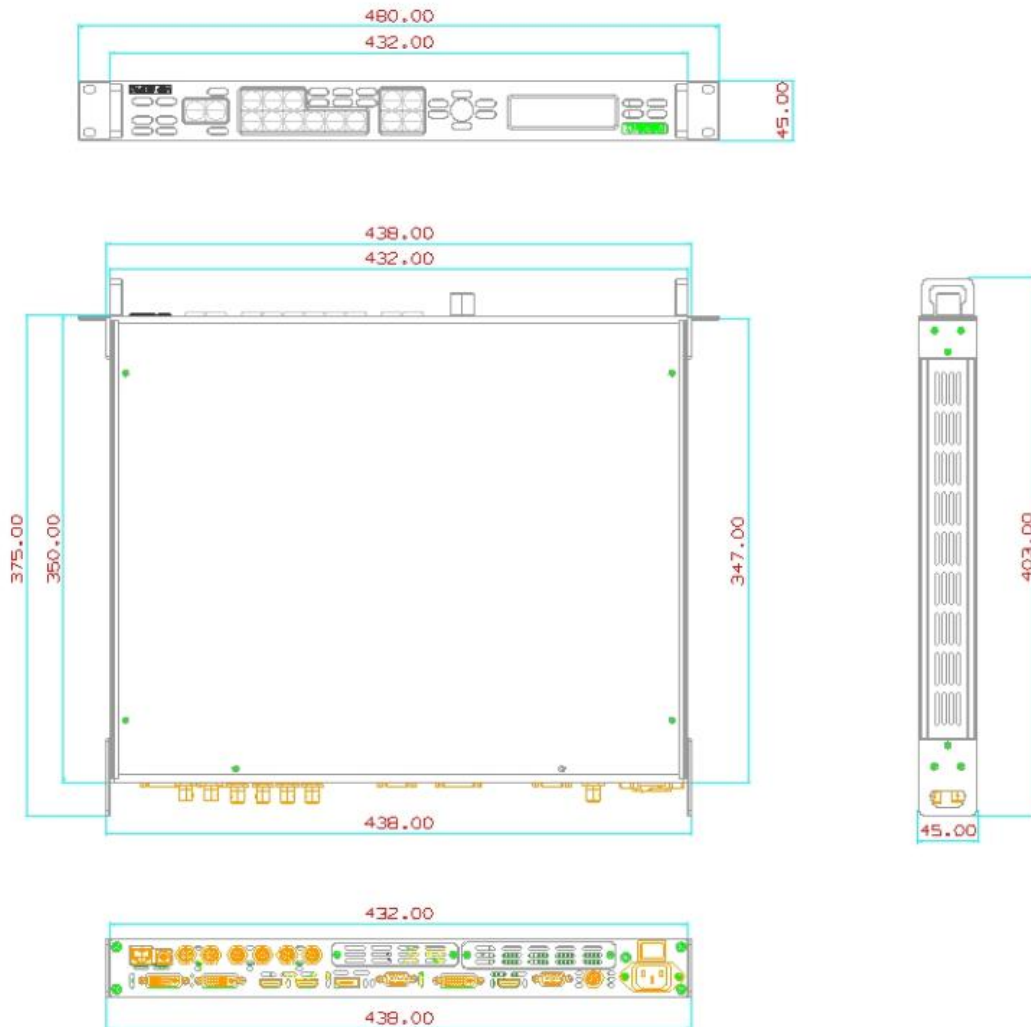
Chapter 2 Installing Your Product

2.1 Plugging in Signals

Connect signals to the product (ensure all devices are powered off first). Tighten connector screws/locks where provided.

For connector protection and for additional cable support this product is fitted with protection frames on either side of the device. For cable support use cable ties to attached to the protection frames to avoid stress on signal connectors.

2.2 Plugging in Main Power

Connect IEC cable to device and plug into wall socket. Turn on power at wall socket.

2.3 Turning on Your Product

Turn the power switch on the rear of the product to the ON position.

OLED display will show as below, completing initialization before loading last settings and input/output configuration.

On delivery, DVI1 will be the default input signal at 1920x1080@60Hz, and the output format is defaulted to 1920×1080p@60Hz.

Program Loading
Please Wait

RGBLINK VSP628PRO
Version 2.79
Initializing...

In : DVI 1   1920×1080p @60
0606   G   Std   @   FADE   LIVE
Out :   1920×1080p @60
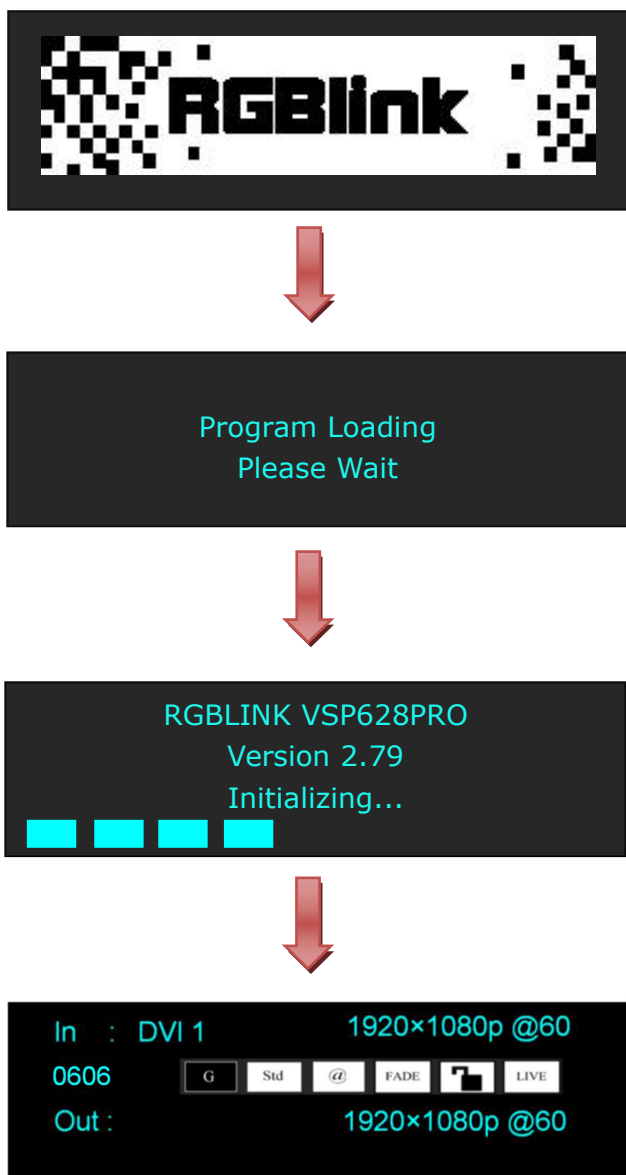
Chapter 3 Using Your Product

3.1 Using the MENU Button

Push the [MENU] button to enter the menu display.

Turn the rotary knob to navigate to the menu item required. The → symbol shows the current item. Push the knob to select and enter into the menu item.

As shown in the figure below:
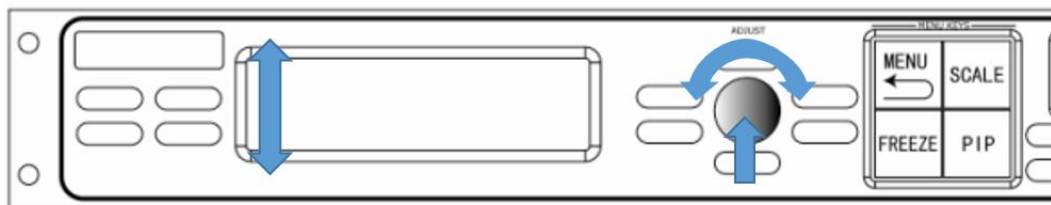
3.2 Understanding the MENU Structure

The MENU structure is shown in the figure below:

Input	Output	Custom Formats	Views	Transition	System	Logo	Display Setup	Test Pattern	Tech Support	Factory Reset
Input Format	Output Fomat		Recall	Trans With	System Mode	Capture Logo	Quick Connection	Type	Version	Factory Reset
Type	CVBS Format		Save	TransTime	Ethernet	Logo Present	Senior	Raster Box	Serial Number	Factory Reset, Save IP
Color Space	Out Auto Config		Delete		Input EDID			Diag Motion	Email	
Sizing Adjust	Area of Interest		Delay Recall		DSK			AOI Raster Box	Website	
VGA Input	Timing Adjust				VFD Bright				WhatsApp	
VGA Adjust	Comp/S-Vid Adj				Lock Front Panel				Skype	
USB Player	Sync Settings				Timer					
4K2K Board	ColorSpace/ Sample/Bit				Language/ 语言					
Hot Backup	De_ interlacing									
	Effets									
	Histogram									
	Genlock									
	Output Select									
	SDI Level									

3.3 Using the Menu

Use the menu system for convenient and intuitive operation. VSP 628PRO OLED display shows the menu items. The OLED display will show the default state when the menu is not in use, or the operation has timed out. Using the MENU button and rotary knob in the front panel, the OLED display will show the corresponding menus according to user selections.

3.3.1 Understanding the Display

Turn the power switch to the ON position, the OLED display will show the start-up interface and show the default menu after completing initialization as below:

Introduce for the above information:
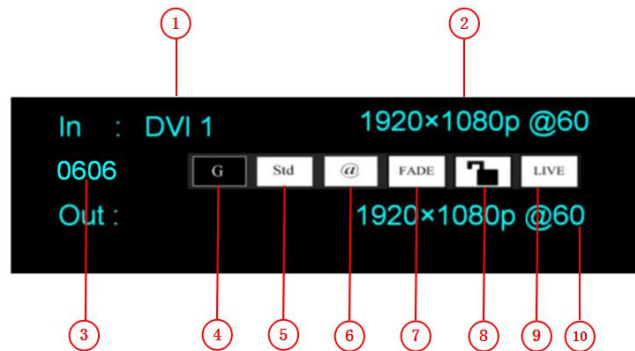
1	**Input Signal** Shows the current **In**put signal that is selected. The related dedicated signal button will be lit red.
2	**Input Resolution** Show the current input resolution from the selected **In**put source. To configure input resolutions, use the EDID Management features. A wide range of input resolutions are supported depending the input – refer to Specification. If a # symbol is show after the resolution, then a custom resolution is being used.
3	**Serial Number** Shows the serial of the product. When not displayed here, the serial number can be found via the TECH SUPPORT menu.
4	**Genlock** Displays to whether a Genlock signal is currently being provided (input). Config from the OUTPUT menu.
5	**System Mode** Indicates the current SYSTEM MODE. SYSTEM MODE is set from the SYSTEM menu.

6	**Ethernet** Displays whether Ethernet connection is active or inactive. Ethernet settings are available in the SYSTEM menu.
7	**Fade** Indicates whether transitions are CUT or FADE. Configure from the TRANSITION menu.
8	**Lock** Indicates if the front panel is locked. Hold MENU button for 3 seconds to lock or unlock.
9	**Live** Indicates whether output video Live or whether FREEZE is active.
10	**Output Resolution** Show the current output resolution. To configure output resolutions, use the OUTPUT menu. A wide range of resolutions are supported – refer to Specification. If a # symbol is show after the resolution, then a custom resolution is being used.

3.3.2 Understanding the Main Menu

Push the MENU button in the default state and turn the rotary knob, the OLED display will show the main menus as below:

```
->Input                    >>
  Output                   >>
  Custom Formats           >>
  Views                    >>


->Transition               >>
  System                   >>
  Logo                     >>
  Display Setup            >>


->Test Pattern             >>
  Tech Support             >>
  Factory Reset            >>
```
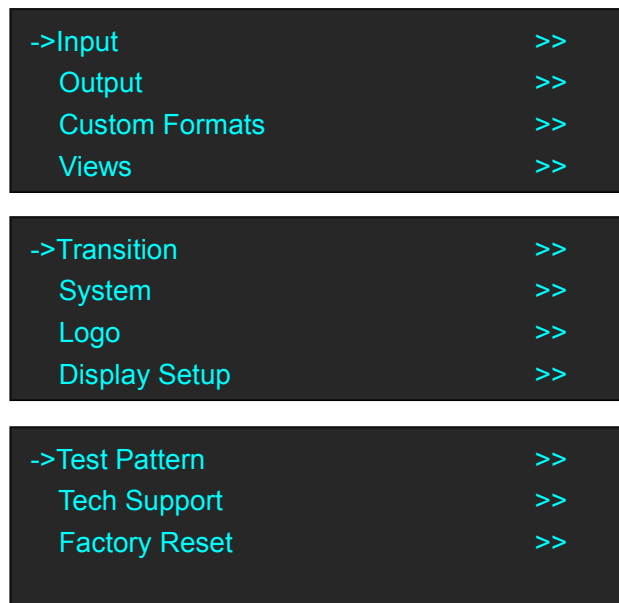
There are 11 menu items in the main menu, and display in 3 pages. Turn the rotary knob, and select any menu above, push the rotary knob to confirm, the OLED display will show the submenu. If push the MENU button, the OLED display will return to the last level menu.

3.3.3 Input Menu

```
->Input Format                    >>
    Type                          >>

->VGA Input                       >>
    VGA Adjust                    >>
    USB Player                    >>
    4K2K Board                    >>

->Hot Backup                      >>
```
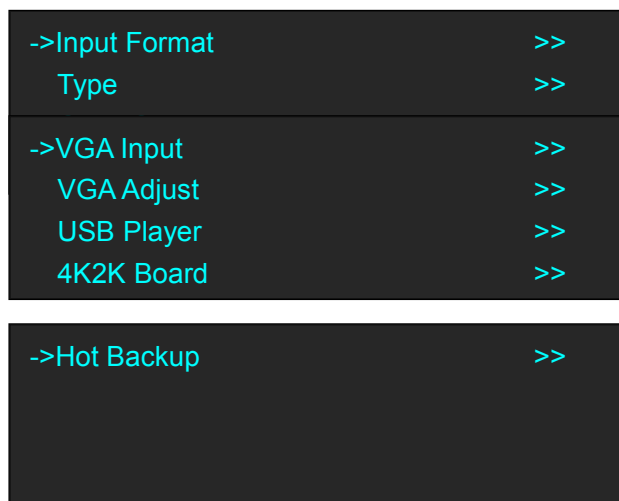
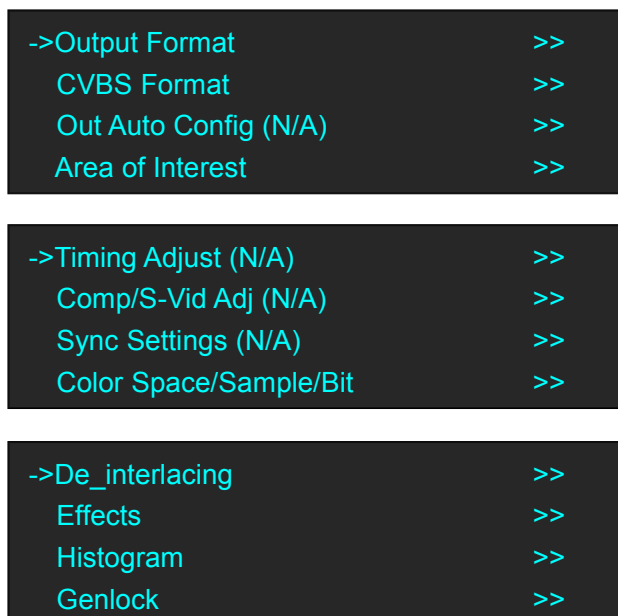| Input Format	Show the current input format.
Type	The type is DVI 1.
Color Space	RGB, YPbPr 422, YPbPr 444 or Auto Detect can be selected.
Sizing Adjust	**H Size** Set the width of the image.
	V Size Set the height of the image.
	H Pos Set the horizontal phase.
	V Pos Set the vertical phase.
	Reset Size Reset size if image quality distorts by improper operation.
	Mask Top Mask the top of the image.
	Mask Bottom Mask the bottom of the image.
	Mask Left Mask the left of the image.
	Mask Right Mask the right of the image.
	Mask Presets 16:9, 5:4, 4:3, 3:2 or 1:1 can be selected.
	Reset Mask Reset mask if image quality distorts by improper operation.
VGA Input	VGA input or YPbPr input can be selected.
VGA Adjust	Brightness red, brightness green, brightness blue, saturation,

|		
	temperature red, temperature green and temperature blue setting, or select auto adjust.	
USB Player	**<u>USB Select</u>**	
	USB1 or USB2 can be selected.	
	<u>File Number</u>	
	Select the file number that will play.	
	<u>Play File</u>	
	Select the play file that will play.	
	<u>Play Mode</u>	
	Picture or video can be selected.	
	<u>Duration of Picture</u>	
	Set the time of duration of picture.	
	<u>Play Order</u>	
	Repeat All, Shuffle, Order, Single Cycle or Single Track can be selected.	
	<u>Play State</u>	
	Play or pause can be selected.	
	<u>USB Upgrade</u>	
	Enable or disable the USB upgrade function.	
4K2K Board	HDMI Point To Point or DP Point To Point can be selected. The resolution that output to VSP 628PRO from 4K2K board will be the same with the HDMI input resolution of 4K2K board if choose HDMI Point To Point. And the resolution that output to VSP 628PRO from 4K2K board will be the same with the DP input resolution of 4K2K board if choose DP Point To Point.	
Hot Backup	Select "ON" or "OFF". If select "ON", it will switch to the backup signal when interrupt signal. System default switch to the next signal.	

3.3.4 Output Menu

```
->Output Format                    >>
   CVBS Format                     >>
   Out Auto Config (N/A)           >>
   Area of Interest                >>
```

```
->Timing Adjust (N/A)             >>
   Comp/S-Vid Adj (N/A)           >>
   Sync Settings (N/A)            >>
   Color Space/Sample/Bit         >>
```

```
->De_interlacing                  >>
   Effects                        >>
   Histogram                      >>
   Genlock                        >>
```

```
->Output Select                              >>
   SDI Level                                 >>
```

Output Format	There are 72 kinds of common resolutions.		
CVBS Format	**CVBS Format**		
	PAL or NTSC can be selected.		
	CVBS Ratio		
	4:3 or 16:9 can be selected.		
Out Auto Config	N/A		
Area of Interest	Set H size, V size, H/V size, H pos and V pos.		
	Scaling Mode		
	FULL, Same With Input, 3:2, 4:3, 5:4 and 16:9 can be selected.		
	Reset		
	If image quality distorts by improper operation, it can be recover by reset.		
	Use AOI		
	Select use AOI or not.		
	Full Size		
	Select full size or not.		
Timing Adjust	N/A		
Comp/S-Vid Adj	N/A		
Sync Setitngs	N/A		
Color Space/ Sample/Bit	DVI or HDMI can be selected.		
	Bit Depth		
	Defaulted 8 bit for DVI and 10 bit for HDMI, 8 bit or 12 bit can be selected for HDMI.		
	Color Space		
	Image or video can be selected.		
	Output EQ		
	Output EQ setting, the adjustment range is 0~7.		
	Output Driver		
	Output driver setting, the adjustment range is 0~5.		
De_interlacing	Select "ON" or "OFF"		
	Delay Time		
	Short or long can be selected.		
	Enable 2:2PD		
	Select "ON" or "OFF" to enable or disable 2:2PD function.		
	2:2PD Time		
	The adjustment range is 0~15.		

VSP 628PRO	**Enable 2:3PD** Select "ON" or "OFF" to enable or disable 2:3PD function.
	2:3PD Time The adjustment range is 0~15.
	Motion Detection Level 1~Level 5 can be selected.
	Diagonal Correction The adjustment range is 0~3.
	24sF Mode Select "ON" or "OFF" to enable or disable 24sF Mode function.
Effect	**Brightness** Brightness RED, Brightness GREEN and Brightness BLUE setting.
	Contrast Contrast RED, Contrast GREEN and Contrast BLUE setting.
	Chroma Set Chroma, Y, U, and V.
	Hue The adjustment range is -180~180.
	Color Temperature Can set 3200K, 6500K or 9300K.
	Color Correction Blue, green and skin color can be corrected.
	Gamma 1, 1.1, 1.2, 1.3, 1.4,1.5, 1.6 can be selected.
	H Sharpness The adjustment range is -10~10.
	V Sharpness The adjustment range is -10~10.
	Noise Reduction Including Horizontal NR, Vertical NR, Temporal NR, Block NR, Mosquito NR and Combing NR.
	Invert Select "ON" or "OFF" to enable or disable Invert function.
	Flip V Select "ON" or "OFF" to enable or disable Flip V function.
	Flip H Select "ON" or "OFF" to enable or disable Flip H function.
	Flip 90 Degree Select "ON" or "OFF" to enable or disable Flip 90 Degree function.
Histogram	Select "ON" or "OFF".
Genlock	**Source** Freerun, external or input can be selected.
	External State

	Show the format and F, V, H and clock lock state.
Output Select	Select CHA or CHB for DVI, HDMI, VGA or CVBS output.
SDI Level	When install two SDI outputs module, user can set the SDI1 and SDI2 level as Level A or Level B.

3.3.5 Custom Formats Menu

```
 Custom Formats
->1920×1080×60.0
Use red number keys and knob
for enter
```
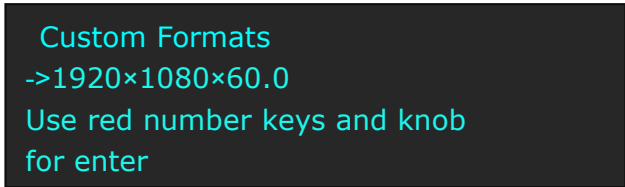
Custom Formats	The special display project or LED display application would like to require special resolution settings to meet the requirement--refer to Custom the Output Resolution.

3.3.6 Views Menu

```
->Recall                          >>
  Save                            >>
  Delete                          >>
  Delay Recall                    >>
```

Recall	Provide 22 saving modes for recall.
Save	Provide 22 positions for saving parameters.
Delete	Delete the file.
Delay Recall	Delay recall time setting.

3.3.7 Transition Menu

```
->Trans With                     Fade
  Trans Time                     0.1S
```

Trans With	Fade or cut can be selected.
Trans Time	The adjustment range is 0.1~10S.

3.3.8 System Menu

```
->System Mode                          >>
  Ethernet                             >>
  Input EDID                           >>
  DSK                                  >>
```

```
->VFD Bright (N/A)                     >>
  Lock Front Panel                     >>
  Timer (N/A)                          >>
  Language/语言                         >>
```

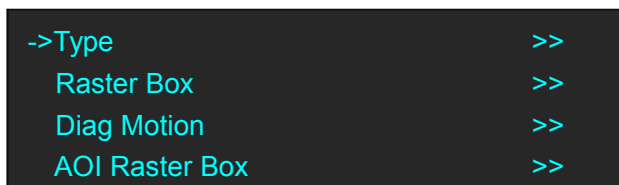| System Mode	Standard, Dual 2K, Switcher, Split or MinDelay can be selected -- refer to System Operation Mode.
Ethernet	DHCP, IP, subnet mask, gateway setting.
Input EDID	Including Input DVI, Input HDMI, Input DP, Input 4K2K HDMI and Input 4K2K DP. User can read the EDID information in **EDID Info** User can custom the EDID formats in **Custom Formats** In **Auto Config**, user can copy the EDID of DVI output device to the front-end input source, set the default EDID output format of input format as DVI/HDMI out format of the device, and copy the system default RGBDVI EDID to the EDID of input source. It can not support DP input.
DSK	Select the input source.
	Preset Including BackGround, Green BackGround, Blue BackGround, Red BackGround and White BackGround.
	Alpha The adjustment range is 0~100.
	Red Min, Red Max, Green Min, Green Max, Blue Min and Blue Max setting, the adjustment range is 0~255.
	DSK Select "ON" or "OFF".
VFD Bright	N/A
Lock Front Panel	Select "Lock" or "Unlock" the front panel.
Timer	Timed task setting.
Language/语言	Chinese or English can be selected.

3.3.9 Logo Menu

```
->Capture Logo                    Enable
   Logo Present                  No Logo
```
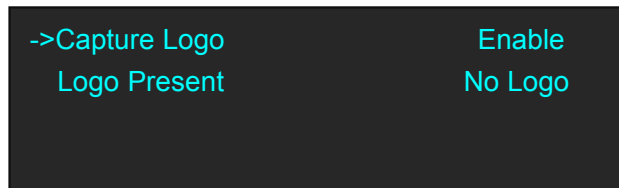
Capture Logo	Select "Enable" or "Disable' the capture Logo function – refer to Capture LOGO.
Logo Present	Display the present logo.

3.3.10 Display Setup Menu

```
->Quick Connection                  >>
   Senior                           >>
```
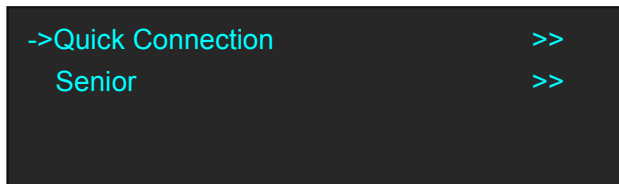
Quick Connection	Select the card type, set the brightness and output format -- refer to Set the LED Display Connection.
Senior	Set the receiving card separately.

3.3.11 Test Pattern Menu

```
->Type                              >>
   Raster Box                       >>
   Diag Motion                      >>
   AOI Raster Box                   >>
```

	Select type of Test Pattern to be displayed. Options are:
Type	LOGO Video frame captured as in the LOGO (see Capture LOGO for instruction on how to capture LOGO) RAMPS H RAMP, V RAMP COLOR BARS 100% COL BAR, 75% COL BAR, SMPTE COL BAR GRIDS 16*16 GRID, 32*32 GRID, BURST GREYS 50% GRAY, GRAY STEP1, GRAY STEP2, WHITE, BLACK
Raster Box	Select "ON" or "OFF". If raster box is "ON", the border is shown around the image, which is for testing.

Diag Motion	Enable/Disable Diagonal Motion of the selected test pattern. Select "ON" or "OFF".
AOI Raster Box	If Raster Box (above) is "ON", size settings in this menu for Box X, Box Y, Box Width and Box Height are displayed. Select Reset to restore default settings. AOI raster box will display for all signals except LOGO (Test Pattern).

3.3.12 Tech Support Menu

```
->Version                        >>
   Serial Number                 >>
   Email                         >>
   Website                       >>
```

```
->WhatsApp                       >>
   Skype                         >>
```
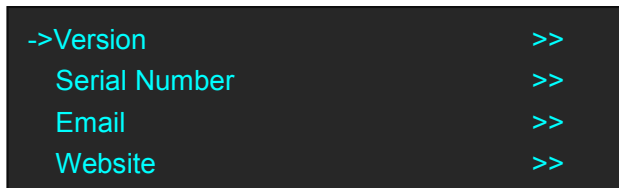
Version	Shows the device firmware version for each component. Shown are Main Board HW, Control Board HW, Core Board SW, Control Board SW, Web COM, Web Server, FPGA1, FPGA2, Optional Input (where fitted), Input SDI1, Input SDI2, Multi Sync, 2U LCD and Sender Card.
Serial Number	Displays the serial number of the device.
Email	Provides on display contact information for RGBlink Support by Email.
Website	Provides on display contact information for RGBlink website.

3.3.13 Factory Reset Menu

```
->Factory Reset                       >>
   Factory Reset, Save IP             >>
```
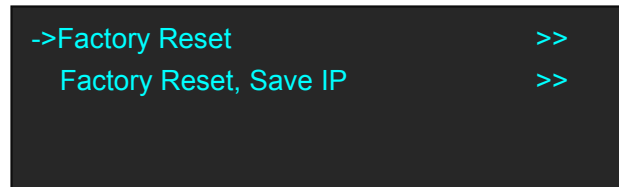
Factory Reset	Select "YES" or "NO". Select "YES" to restore default settings.
Factory Reset, Save IP	Select "YES" or "NO". Select "YES" to restore default settings, but keep the IP.

3.4 System Operation Mode

VSP 628PRO has five operation modes, which are called SYSTEM MODEs, these include Standard, Dual 2K, Switcher, Split and MinDelay.

3.4.1 System Modes

Standard
In standard mode, both output channels output the same signal and resolution.
PIP is available for use.

Dual 2K
Each of the two output channels can have individually have resolution and scale set.
There is no PIP in this mode.

Switcher
Using this mode enables Preview and Program operations, with the DVI (as standard) being the Program output and HDMI being the Preview output.
Resolution of each output is the same, however, each program/preview can have scale independently set.This is the default mode following a reset.
There is no PIP in this mode.

Split
Allows splitting a input signal across both output channels, and also provides setting where the source is to be split across more than one device.
There is no PIP in this mode.

MinDelay
Is mainly for broadcast applications, for signal conversion with less than 1 frame delay.
There is no PIP in this mode.

3.4.2 Set the System Operation Mode

Go to the SYSTEM menu select the required SYSTEM MODE.
For all SYSTEM MODES other the SPLIT, the VSP 628PRO will show "SYSTEM MODE SETTING...", which will take up to 30secs before the device is ready.

Single Image Switching
VSP 628PRO can realize seamless effects switching between two channels.
Push the signal button, and the signal will be switched to the output.
For example, the [SDI1] button light is on, it means the signal of output is SDI1, if user needs to switch to VGA signal, push the [VGA] button, and the signal will be seamless cut or fade in fade out to the output. User can adjust the switch speed in <Trans Time> option in <Transition>by pushing the [MENU] button.

PIP Setting

Enable the PIP function

VSP 628PRO supports seamless switch in single image and double images.

Push the [PIP] button, the button light is on, and enable the PIP function.

Select the signal in PIP

VSP 628PRO can output two same or different signals to the output, the settings are as follows:

1. Push the [PIP] button, and enable the PIP function.

2. Push the [SCALE] or [DIMMER] button, select <Layer Select>, and push the rotary knob to confirm. (User can also select <Layer Select> in <Input> or <Output> option by pushing the [MENU] button.

3. Turn the rotary knob, and select main or sub image.

4. Select the signal, and the selected image will be switched to this signal.

Note

> Note: PIP Setting is applied to Standard Mode.

Scale Setting

1. Push the [SCALE] button, and enter to the scale function menus.

2. Adjust the H size, V size, H/V size, H pos, V pos and scaling mode by turning the rotary knob or number buttons.

3. If image quality distorts by improper operation, it can be recover by reset.

Note

> In PIP mode, user need to select the image that to set in <Layer Select> option before setting.

Image Size Setting

1. Push the [MENU] button, and enter to the menu items.

2. Turn the knob, and select <Input>, push the knob to confirm.

3. Turn the knob, select <Sizing Adjust>, push the knob to confirm.

4. Adjust the H size, V size, H pos V pos, and mask top, bottom, left and right of the image by turning the rotary knob or number buttons.

5. If image quality distorts by improper operation, it can be recover by reset.

Note

> In PIP mode, user need to select the image that to set in <Layer Select> option before setting.

Dimmer and Effects Setting

1. Push the [DIMMER] button, and enter to the menu items, which include dimmer and effects.

2. Dimmer setting: The adjustment range is 0~100.

3. Effects setting: The setting for effects include brightness, contrast, chroma, hue, color temperature, color correction, gamma, brightness, H sharpness, V sharpness, noise reduction, Invert, Flip V, Flip H and Flip 90 Degree.

Note

> User can also select <Effects> in <Output> option by pushing the [MENU] button for setting.

Note

> In Dual 2K mode, User need to select the channel in <Channel Select> before setting. For example, choose the signal of CHB:
> 1. Push the [MENU] button to enter to menu items.
> 2. Select <Output>, push the rotary knob to confirm.
> 3. Turn the rotary knob, and select <Channel select>.
> 4. Turn the rotary knob and select CHB.
> 5. Select the signal, and CHB will switch to the selected signal.

Note

> In Switcher mode, all the settings above are for preview.

Split Setting

In split mode, user can set split parameters of single or multiple devices quickly. The split operations are as follows:

Project: There is one LED display, the size is 3864x1152, divide into right and left halves, the left width is 1824 and the right width is 2040, we will cascade the two LED displays with one VSP 628PRO, and display a complete picture in the whole screen.

(1) Connect the interface

Connect the DVI signal to the DVI input interface, connect the DVI output to the left LED sending card, and connect the HDMI output to the right LED sending card.

(2) Select the system mode

Push the [MENU] button to enter to the menu items, turn the rotary knob to select <System>:

Transition	>>
->System	>>
Logo	>>
Display Setup	>>
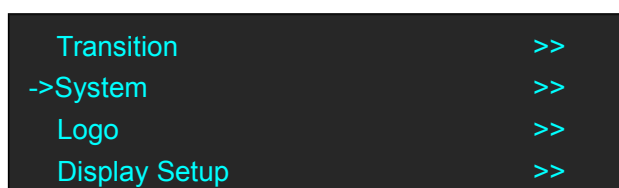
Push the knob to confirm, turn the rotary knob to select <System Mode>:

```
->System Mode                    >>
   Ethernet                      >>
   Input EDID                    >>
   VFD Bright                    >>
```

Push the knob to confirm, turn the rotary knob to select <Split>:

```
   System Mode
 * Split
```

(3) Select the split mode

Turn the rotary knob in split menus, and select the split mode as <One Machine> or <Multi Machine>.

```
->One Or Multi             One Machine
```

Select <One Machine>, push the rotary knob to confirm, turn the rotary knob, select the split mode, for example, select <H One-To-Two>:

```
   One Machine
 * H One-To-Two
```

(4) Set the output format

Push the [MENU] button to enter to the menu items, turn the rotary knob and choose <Output>.

```
   Input                         >>
->Output                         >>
   Custom Formats                >>
   Views                         >>
```

Push the rotary knob to confirm. Turn the knob to select <Output Format>, and set the output formats as 2048x1152@60Hz.

```
   Channel Select            CHA
->Output Format               >>
   CVBS Format                >>
   Out Auto Config (N/A)      >>
```

The resolutions of the two outputs will change at the same time.

(5) Set the split parameters

After select the split mode, the OLED screen will show the split parameters, set the H total as 3864, set the V total as 1152, set the first width as 1824, then turn the rotary knob, and **select　<Set Parameter>, push the rotary knob to confirm.**

```
->H Total                        3864
   V Total                       1152
   First Width                   1824
   Set Parameter                  >>
```

(6) Save

Push the [MENU] button to enter to the menu items, turn the rotary knob and select <Views>.

```
   Input                          >>
   Output                         >>
   Custom Formats                 >>
->Views                           >>
```

Push the rotary knob to confirm. Turn the rotary knob again and select <Save>.

```
   Recall                         >>
->Save                            >>
   Delete                         >>
   Delay Recall                   >>
```

Push the rotary knob to confirm. Turn the rotary knob to select the save mode, for example, select File 4, push the rotary knob to confirm.

```
   Save
->File 4
```

3.5 Set the Output Resolution

3.5.1 Select the Output Resolution

1. Push the [MENU] button, and enter to the menu items, turn the rotary knob and select
   <Output>:

```
    Input                        >>
 ->Output                        >>
    Custom Formats               >>
    Views                        >>
```
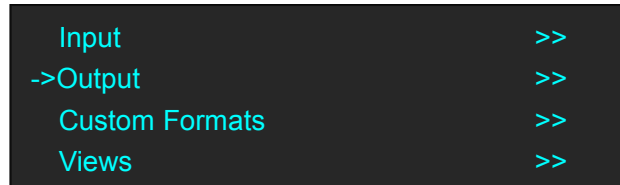
2. Push the rotary to confirm, and enter to the menus as below:

```
 ->Output Format                 >>
    CVBS Format                  >>
    Out Auto Config (N/A)        >>
    Area of Interest             >>
```
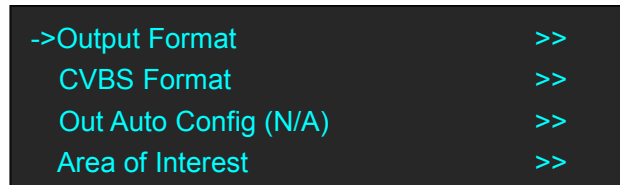
3. Push the rotary to confirm. Turn the rotary knob, select the output resolution according
   to actual need.

```
    Output Format
 ->1920×1080p @60
```
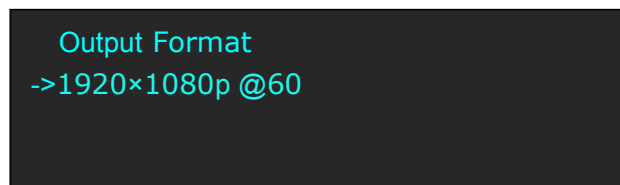
3.5.2 Custom the Output Resolution

Push the [MENU] button to enter to the menu items, turn the knob and select <Custom
Formats>, push the rotary knob and confirm.

```
    Custom Formats
 ->1920×1080×60.0
    Use red number keys and knob
    for enter
```
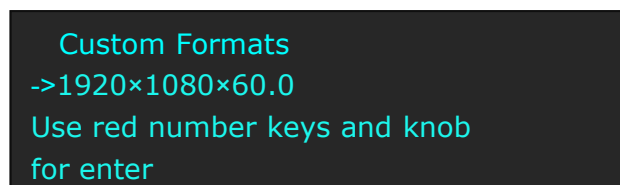
1. Enter digits of desired resolution by pushing the red number buttons. For example, input
   1536 as following:

```
   Custom Formats
*1536×
Use red number keys and knob
for enter
```

2. After the digital, push the rotary knob will add ×, means before × is the horizontal size. Same operation for vertical size, For example, input 1536 as following:

```
   Custom Formats
*1536×1536×
Use red number keys and knob
for enter
```

3. After the digital, push the rotary knob will add ×, means before the × is the vertical size, and after the × is the refresh rate. Only digital 50 or digital 60 supports for the refresh rate. For example, input 60 as following. Use the digital buttons to finish the settings.

```
   Custom Formats
->1536×1536×60.0
Use red number keys and knob
for enter
```

4. After input all the values, push the rotary knob to enable VSP 628PRO to output this resolution. VSP 628PRO will take 5~10 seconds to enable this output resolution.

3.6 Set the LED Display Connection

VSP 628PRO can realize two connection as follows connecting the Port D or Port U of one sending card to LED screen and connecting the both Port D and Port U of one sending card to LED screen (PORT A or PORT B is for Colorlight, and PORT D or PORT U is for Linsn). The following are the detailed operation steps of the two connections.

1. Connect the Port D or Port U of One Sending Card to LED Screen

(1) First, make sure that the device is in normal operation.

(2) Select the input source, for example, DVI.

(3) Connect the cable to Port U.

(4) Turn the rotary knob, and select <Display Setup>:
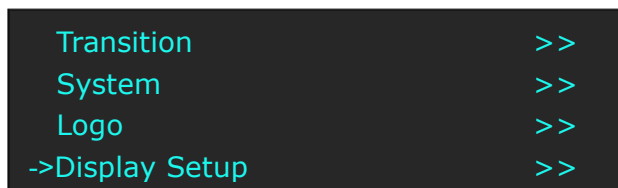
```
Transition                        >>
System                            >>
Logo                              >>
->Display Setup                   >>
```

(5) Push the rotary knob to confirm, turn the rotary knob, select <Card Type> in <Quick Connection> option, push the rotary knob to confirm, turn the rotary knob, select the sending card type, for example, select Linsn (VSP 628PRO supports Linsn and Colorlight sender card, for Nova sender card, it only support brightness and Gamma adjustment). Shown as follows:

```
->Quick Connection                >>
Senior                            >>


```



```
*Card Type                        Linsn
Brightness                        >>
Output Format                     >>
Quick Connection                  >>
```

(6) After setting, turn the rotary knob, select <Quick Connection>, push the rotary knob to confirm for next setting, shown as follows:

```
Card Type                         Linsn
Brightness                        >>
Output Format                     >>
->Quick Connection                >>
```
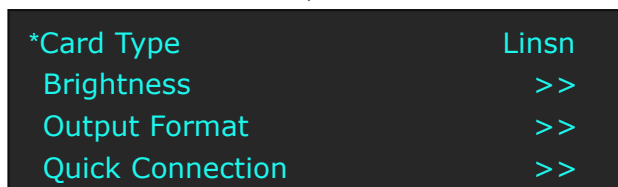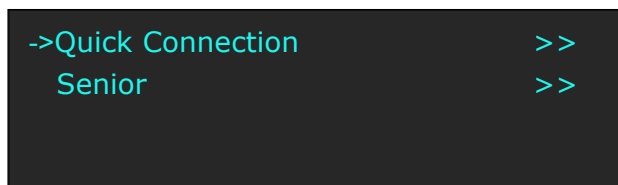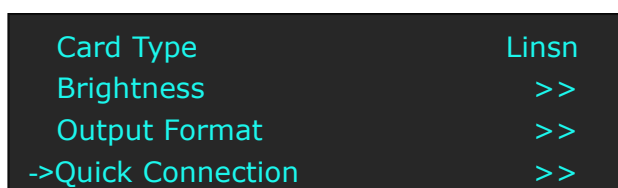
```
->Sending Card                    >>
  Receiving Card                  >>
```

(7) Turn the rotary knob, select <Receiving Card>, push the rotary knob to confirm. Turn the rotary knob again, and select <Choose Cable>, push the rotary knob to confirm. Turn the rotary knob, select Port U and push the rotary knob to confirm.

```
  Sending Card                    >>
->Receiving Card                  >>
```

```
->Choose Cable                  Port U
  Horizontal Card                   1
  Vertical Card                     1
  Width                            64
```

(8) Set the horizontal card, vertical card, width and height. For example, set horizontal card as 3, vertical card as 2, width and height as 120, shown as follows:

```
  Choose Cable                  Port U
->Horizontal Card                   3
  Vertical Card                     2
  Width                           120
```

```
->Height                          120
  Port Offset X                     0
  Port Offset Y                     0
  Connect Type                     >>
```
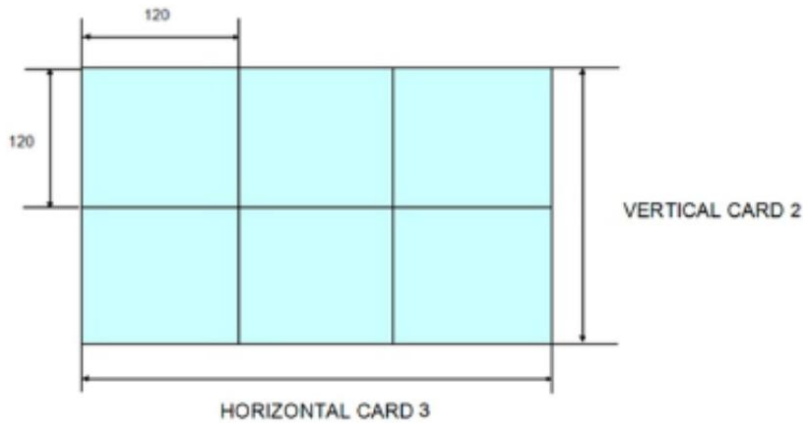
After setting, turn the rotary knob and select <Connect Type> according to actual connection mode. VSP 628PRO support 8 kinds of connection modes, they are ⊇, � ⊆, ⊆, ⊇, ⊔, ⊓, ⊔ and ⊔ respectively.

Save to receiver after choose the connection mode, observe the display screen and make sure if display image is correct. If wrong, change the connection types. Then connect the Port D or Port U of One Sending Card to LED Screen is finished.

(9) The setting for port D is same as the above setting.

Rendering is as follows:

2. Connect the Port D and Port U of One Sending Card to LED Screen

(1) First, make sure the device is in normal operation.

(2) Select the input source, for example, DVI.

(3) Connect one cable to Port D, the other one to U.

(4) Connect Port U to LED screen, the settings are same as Step 4 to Step 8 of "**Connect the Port D or Port U of One Sending Card to LED Screen**".

(5) Connect Port D to LED screen, the settings are as follows:

a. Turn the rotary knob, and select <Display Setup>:

```
      Transition                      >>
      System                          >>
      Logo                            >>
   ->Display Setup                    >>
```

b. Push the rotary knob to confirm, turn the rotary knob, select <Card Type> in <Quick Connection> option, push the rotary knob to confirm, turn the rotary knob, select the sending card type, for example, select Linsn (VSP 628PRO supports Linsn and Colorlight sender card, for Nova sender card, it only support brightness and Gamma adjustment). Shown as follows:

```
   ->Quick Connection                 >>
      Senior                          >>


```

```
   *Card Type                       Linsn
    Brightness                        >>
    Output Format                     >>
    Quick Connection                  >>
```

c. After setting, turn the rotary knob, select <Quick Connection>, push the rotary knob to confirm for next setting, shown as follows:

```
      Card Type                     Linsn
      Brightness                      >>
      Output Format                   >>
   ->Quick Connection                 >>
```

```
   ->Sending Card                      >>
      Receiving Card                   >>


```

d. Turn the rotary knob, select <Receiving Card>, push the rotary knob to confirm. Turn the rotary knob again, and select <Choose Cable>, push the rotary knob to confirm. Turn the rotary knob, select Port D and push the rotary knob to confirm.

```
    Sending Card                      >>
 ->Receiving Card                     >>
```

```
 ->Choose Cable                   Port D
    Horizontal Card                    3
    Vertical Card                      2
    Width                            120
```

e. Turn the rotary knob, and select <Port Offset Y>, push the rotary knob to confirm. Turn the rotary knob, Set Port Offset Y as 240 (Note: Port Offset Y = Vertical × Height, before we set vertical card as 2 and height as 120). Shown as follows:

```
    Height                           120
    Port Offset X                      0
 ->Port Offset Y                     240
    Connect Type                      >>
```

f. Turn the rotary knob, and select <Connect Type>, shown as follows:

```
    Height                           120
    Port Offset X                      0
    Port Offset Y                    240
 ->Connect Type                       >>
```

Select the connection mode, the setting is same with Port U. Then connection of both the Port D and Port U of One Sending Card to LED Screen is finished.
Rendering is as follows:
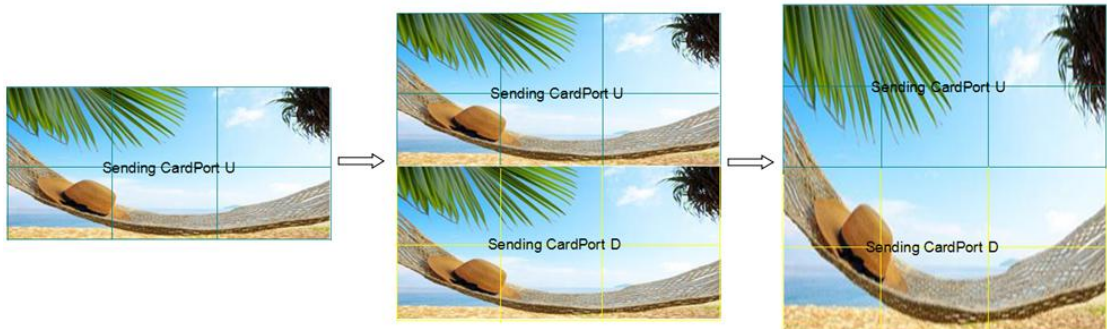
3.7 Capture LOGO

1. Push the signal button, and select the input signal.
2. Push the [SCALE] button, turn the rotary knob or numeric keys to set the size and position of the LOGO.

```
->H Size                        1857
   V Size                       1080
   H/V Size                     1857
   H Pos                           0
```

```
->V Pos                            0
   Scaling Mode                 FULL
   Reset                          >>
```

3. Push the [MENU] button and enter to the menu items, turn the rotary knob and select <Logo>:

```
   Transition                     >>
   System                         >>
->Logo                            >>
   Display Setup                  >>
```

4. Push the rotary knob to confirm. Turn the rotary knob again, select <Capture Logo>, and set "Capture Logo" as "Enable":

```
->Capture Logo               Enable
   Logo Present               Logo 1
```

Capture logo will finished after a few seconds.

3.8 Using LOGO Button

Push the [LOGO] button, user can set the test pattern, the settings are as follows:

```
->Type                        H RAMP
    Raster Box                   OFF
    Diag Motion                  OFF
    AOI Raster Box                >>
```

Type: Select the type of the Test Pattern to be displayed. Options are:

LOGO: Video frame captured as in the LOGO.

RAMPS: H RAMP, V RAMP.

COLOR BARS: 100% COL BAR, 75% COL BAR, SMPTE COL BAR.

GRIDS: 16*16 GRID, 32*32 GRID, BURST.

GRAYS: 50% GRAY, GRAY STEP1, GRAY STEP2, WHITE, BLACK.

Raster Box: Enable or disable the raster box function. If raster box is "ON", the border is shown around the image, which is for testing.

Diag Motion: Enable or disable Diagonal Motion of the selected test pattern.

AOI Raster Box: If Raster Box (above) is "ON", size settings in this menu for Box X, Box Y, Box Width and Box Height are displayed. Select Reset to restore default settings. AOI raster box will display for all signals except LOGO (Test Pattern).

3.9 Saving Views

VSP 628PRO provides 22 positions for saving or recording parameters. To save current parameters and settings:

1. Push the [MENU] button to enter to the menu items, turn the rotary knob, select <Views>, push the rotary knob to confirm.

Input	>>
Output	>>
Custom Formats	>>
->Views	>>

2. Turn the rotary knob, and select <Save>, push the rotary knob to confirm.
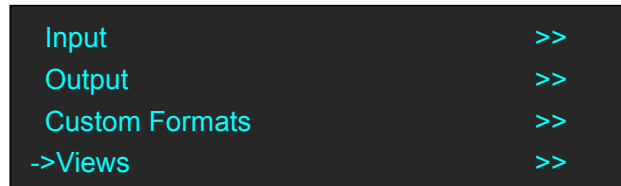
Recall	>>
->Save	>>
Delete	>>
Delay Recall	>>

3. Turn the rotary knob, and select the location that need to save, push the rotary knob to confirm.

Save
->File 3

Note

If position 1 is saved, this will be recalled and loaded at power on.

3.10 Recall Saved Settings

VSP 628PRO provides 22 positions for saving or recording parameters. To recall saved settings:

1. Push the [MENU] button to enter to the menu items, turn the rotary knob, select <Views>, push the rotary knob to confirm.

```
Input                          >>
Output                         >>
Custom Formats                 >>
->Views                        >>
```

2. Turn the rotary knob, and select <Recall>, push the rotary knob to confirm.

```
->Recall                       >>
  Save                         >>
  Delete                       >>
  Delay Recall                 >>
```
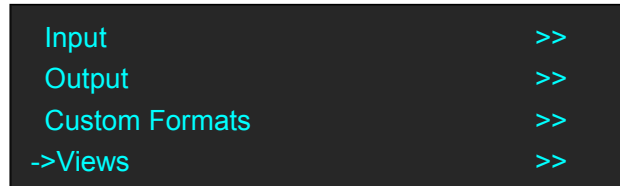
3. The button on is ready for recall, and button flashes means just recall. Push the button on or turn the rotary knob to select the location that need to recall, push the rotary knob to confirm.

```
  Recall
->File 3
  Press Number Keys to Enter

```
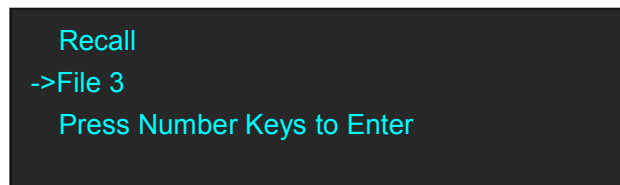
Note

> User can only recall File 1 to File 10 by pushing the button. Beyond File 10, please select the file by the rotary knob.

Chapter 4 Controlling Your Processor Remotely

4.1 Using the Windows Control Program

Install the software on a Windows computer, launch the application.
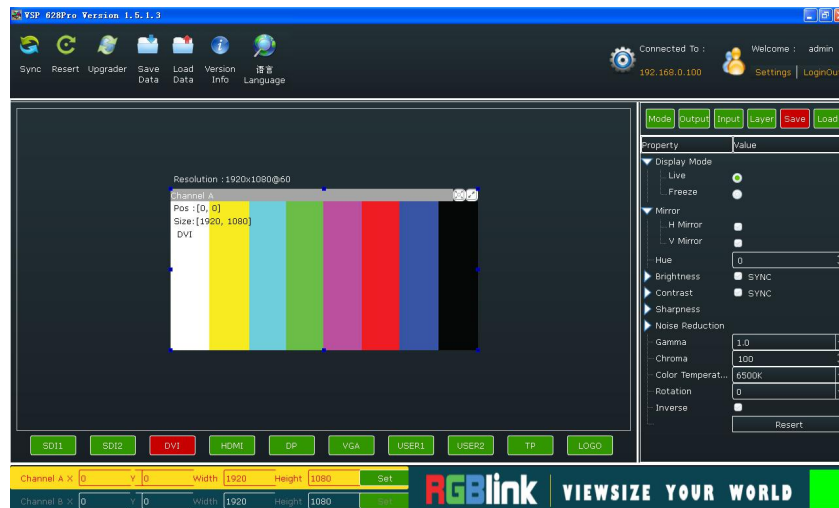
4.1.1 Set up Communication

First, connect the VSP 628PRO to the computer with the network cable or USB cable, and boot the device.

Then, click the connection icon and enter to the software interface as below:
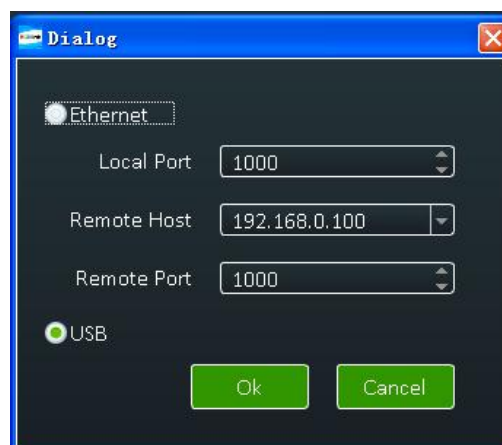
Finally, select Ethernet or USB connect, click "Ok", and finish connecting.

The green square in the bottom right means the connection is successful, white red is not.

4.1.2 Use

Image Toolbar

Show the image information, including resolution, channel, position, size and the signal. The image size will be changed when set the parameters.

Signal Select

Click the signal icon, and the output image will be switched to the selected signal.

Scale

Select Channel A or Channel B, and scale the image by adjusting X, Y, Width and Height according to actual need. Click "Set" after finish.

Mode

Click "Mode", and enter to the interface as below. VSP 628PRO supports Std mode, PIP Mode, Dual 2K Mode, Switcher Mode and Split Mode. User should select Std Mode before choose PIP Mode, or it will not be shown on the interface.
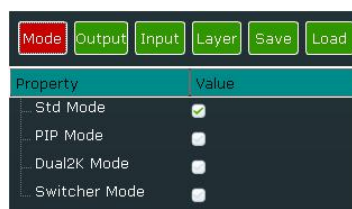
Output

Click "Output", and enter to the interface as below if select Std mode, PIP Mode and Switcher Mode.
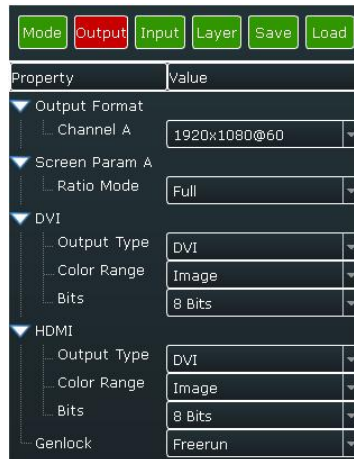
Click "Output", and enter to the interface as below if choose Dual 2K Mode.
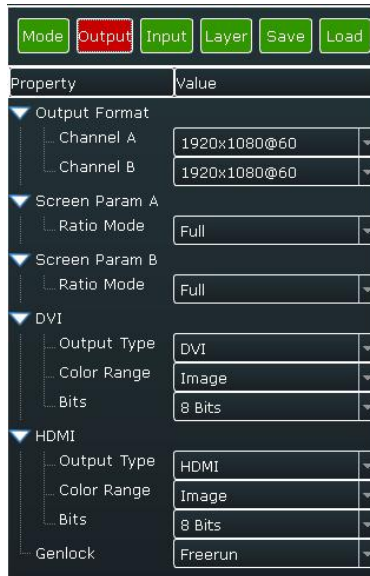
Output Format

Select the output format of CHA by selecting from scrolling down list.

Select the output formats of CHA and CHB by selecting from scrolling down list if choose Dual 2K Mode.
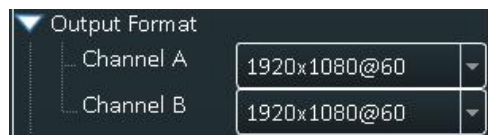
Screen Parameter

Select the ratio mode of Screen Param A by selecting from scrolling down list, including Full, Same with Input, 3:2, 4:3, 5:4 and 16:9.

Select the ratio mode of Screen Param A and Screen Param B if choose Dual 2K Mode.

DVI

DVI setting, including output type, color range and Bits.

Output Type: Can select DVI or HDMI, system default DVI output, HDMI signal output will enable when HDMI option checked.

Color Range: Can select image or video.

Bits: Set the image bits, system default DVI is 8 bits.
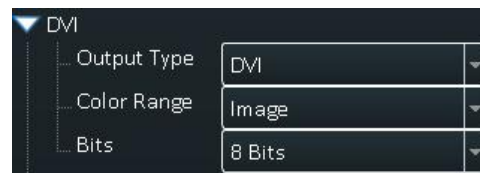
HDMI

HDMI setting, including output type, color range and Bits.

Output Type: Can select DVI or HDMI.

Color Range: Can select image or video.

Bits: Set the image bits, system default HDMI is 10 bits, user can select 8 bits or 12 bits.
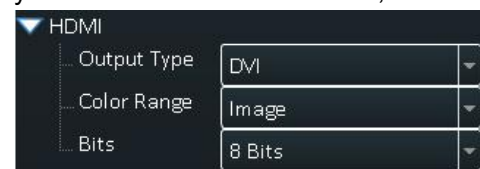
Genlock

Use can enable or disable the genlock function, and set external and input signal genlock.

Input

Click "Input", and enter to the interface as below:

Input Format

Read the current input format.

Color Space

Select the color space, including RGB, YUV4:2:2, YUV4:4:4 and Auto.

Layer

Click "Layer", and enter to the interface as below:
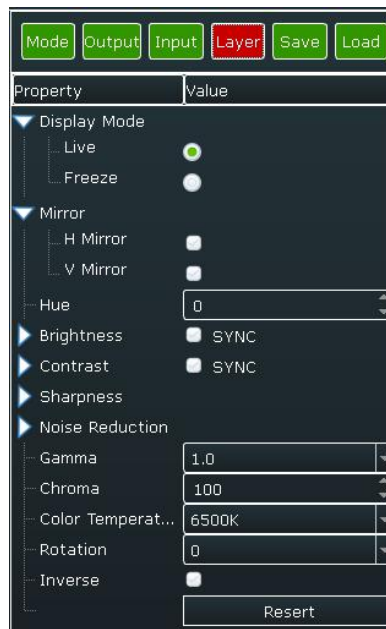
Display Mode

Select the display mode as live or freeze.

Mirror

Select H Mirror or V Mirror.

Hue

Set the hue of the image according to actual need, the adjustment range is -180~180.

Brightness

Set the brightness, including red, green and blue. If select "SYNC", when drag one color, the other two color values will change accordingly to the same value. The adjustment range is -512~512.

Contrast

Set the contrast, including red, green and blue. If choose "SYNC", when drag one color, the other two color values will change accordingly to the same value. The adjustment range is 0~399.

Sharpness

Set the H sharpness and V sharpness according to actual need, the adjustment range is -10~10.

Noise Reduction

User can do noise reduction processing for the image, which including H Noise Reduction, V Noise Reduction, B Noise Reduction, M Noise Reduction, C Noise Reduction and T Noise Reduction. The adjustment range is 0~3.
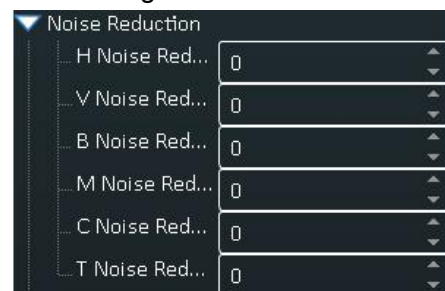
Gamma

Enable the gamma function and set the gamma value by selecting from scrolling down list.

Chroma

Set the chroma of the image according to actual need. The adjustment range is 0~399.

Color Temperature

Set the color temperature of the image according to actual need, user can select 3200K, 6500K and 9300K.

Rotate

Set the rotate of the image according to actual need, user can select -90, 0 and 90.

Inverse

User can enable or disable the inverse function.

Reset

If image quality distorts by improper operation, it can be recover by reset.

Note

> All the settings above are only for the selected channel, and for preview channel in switcher mode.

Save

Click "Save", and enter to the interface as below. VSP 628PRO supports 22 positions to save the parameters. Click the save mode according to actual need.

Load

Click "Load", and enter to the interface as below. VSP 628PRO supports 22 kinds of saving modes for recall. Click the save mode to load the saved parameters.

Other
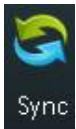
Sync: Read the current parameters of VSP 628PRO.

Resert: Reset the factory settings.

Upgrader: Upgrade the device, and user can clear the log.
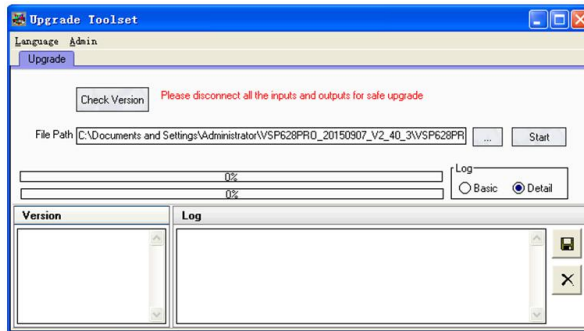
Save Data: Save the data to the computer hard drive.
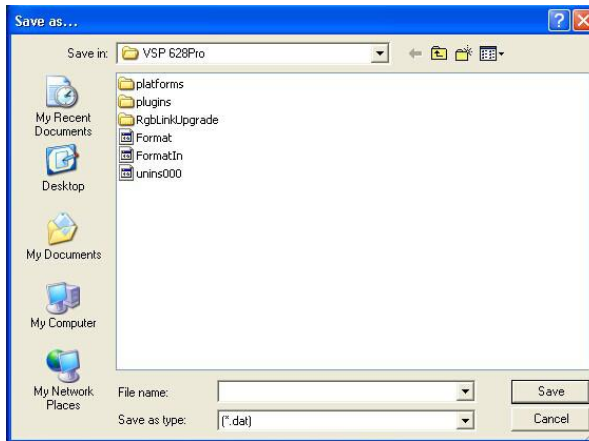
: Load the data from the computer.
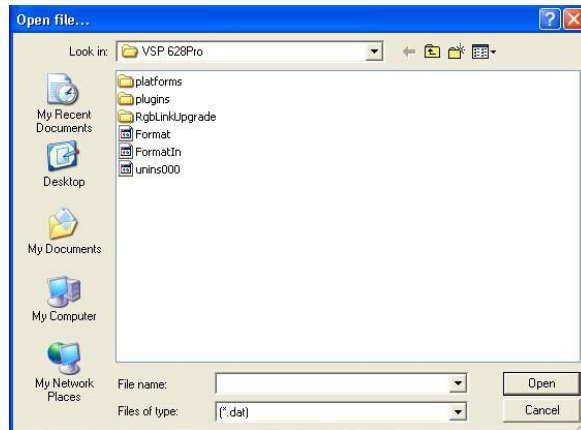
: Show the device version information.
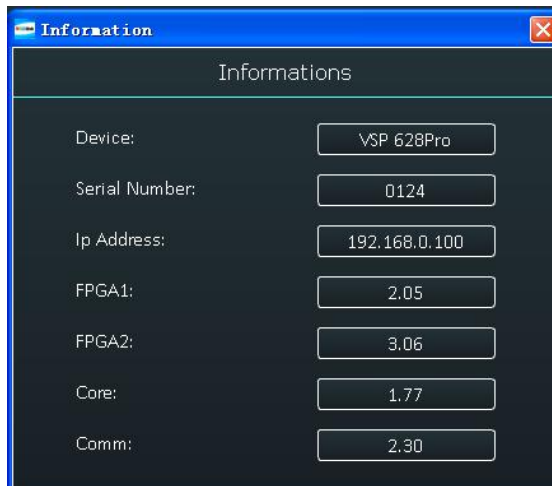
: This software supports both Chinese and English, user can switch the language by "Language" option.

: Operation permissions settings for manager, log in and set the log password of windows control program. VSP 628PRO V2.0 can not support this function.

4.2 Using the VSP 628PRO App for Android & iOS

1. Download the APP

Go to the App Store on your device, search RGBlink and load the VSP 628PRO App.

2. APP Control Interface Introduction

<div align="center">

WIFI　　　　　　　　　　　　**Network cable**

</div>
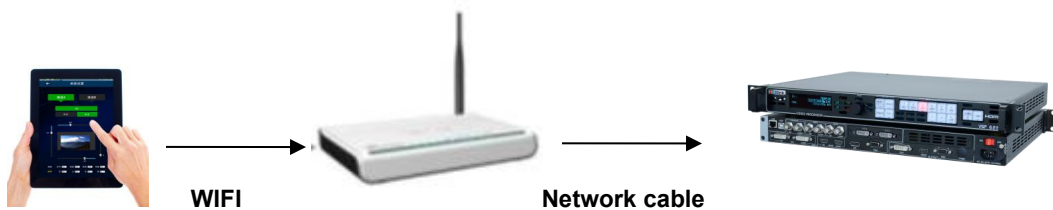
1. Prepare a router that with wireless internet and DHCP function, connect and set the router by computer before connect to VSP 628PRO, and enable the IP and DHCP function. (For more details about setting, please refer to router's instruction).

2. Connect the LAN port of router to the LAN port of VSP 628PRO with the network cable.

3. Connect to the router by IOS or Android device, system default IP automatic access, use the web browser to access "192.168.0.100", the default IP address of VSP 628PRO, if the IP address is changed, please enter the changed IP address. (Set path: MENU->System->Ethernet->IP), user can wirelessly control VSP 628PRO after loading.

1) Make sure the device is connected to the router, power on, after the device is stable, turn on the mobile phone or IPAD APP to search and connect the device, as follows:

2) There are 2 device options after connect the device, DEMO is the presentation template that comes with software, choose any one of them, as follows:

3) After connection, it enters to the processor manager interface, as follows:
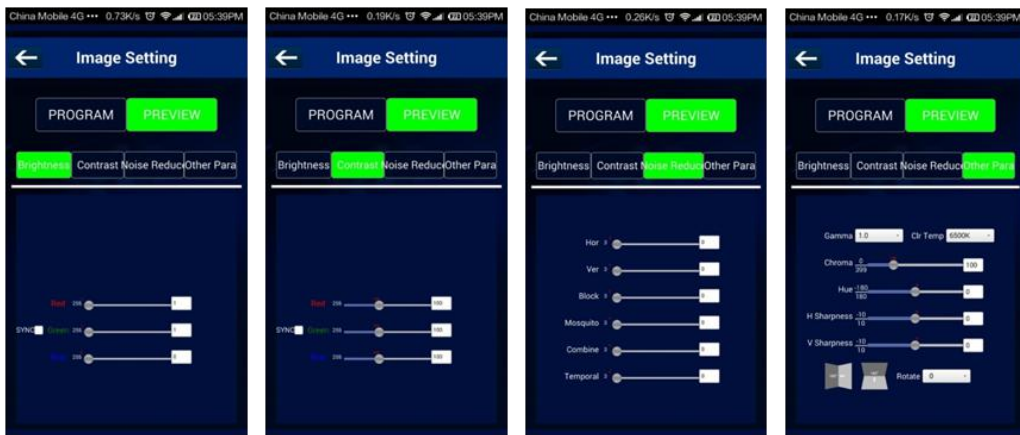

4) Click <Signal Select>, it supports 4 different modes, as follows:

5) Click <Save And Load>, it supports 22 kinds of save modes, as follows:
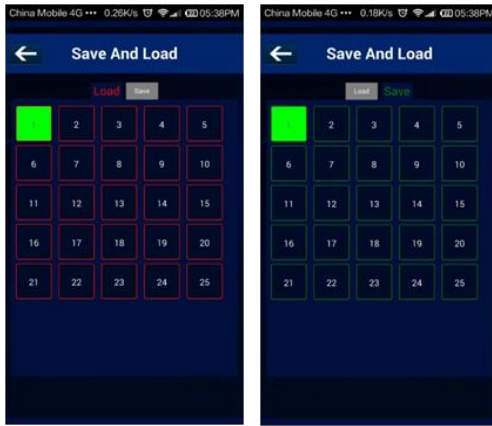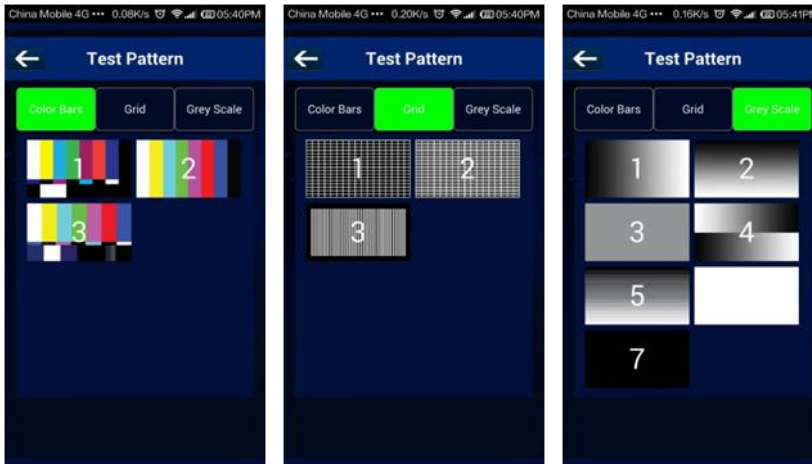
6) Click <Image Setting>, user can adjust the parameters in preview mode, as follows:

7) Click <Mask And Scale>, user can mask and scale the image, as follows:

8) Click <Test Pattern>, there are 13 kinds of test patterns, as follows:

9) Click <Parameter Setting>, user can adjust the output resolution, as follows:

10) Click <Information>, user can view the device mode, serial number, IP address and module versions. User can also click "Factory Reset" to reset to its factory settings.

4.3 Connecting to an Ethernet Network

To realize LAN remote control need to build up a LAN platform, include the following:

One computer (Laptop or computer, used to do remote control which installed windows control software in the computer).

One router (Better to have wireless function which may realize WEB control cross different platform; without wireless function is available but only realize cable remote control. No limitation for router's model and brand, such as VPN router model: Netcore 255 or 266; Volans VE 760W or 982W).

One VSP 628PRO processor (as long as the router's network ports can connect to, user can place multi pieces of VSP 628PRO).

The operations are as follows:

Step one: LAN physical connection. Connect VSP 628PRO and router with network cable, then connect computer and router with network cable also, use the LAN port of router, WAN port is used for connecting to outer net. Sketch map as below:
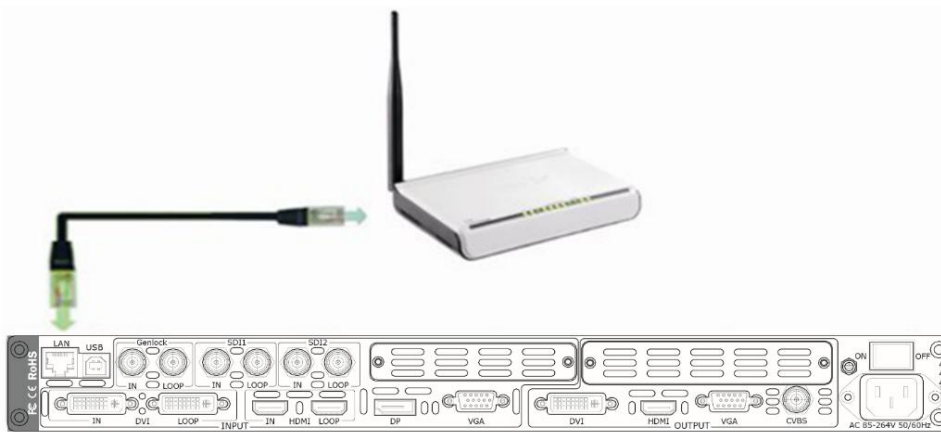
Step two: IP address setting (processor's default IP address is 192.168.0.100)

Firstly change computer's local connection to "automatically getting the IP", showed as below:
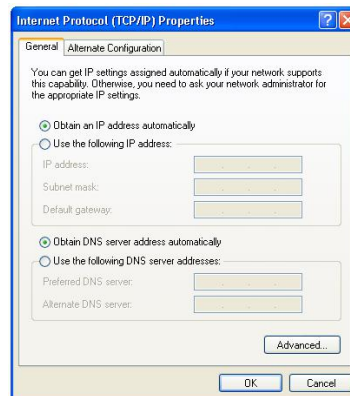
Secondly refer to router's instruction (user manual, specification), and find out router's default network segment.

If router's default network segment is 192.168.0.1, then it is same to processor IP address segment, open up windows control software and user can directly control on VSP 628PRO.

If router's default network segment is 192.168.1.1, then user need to change router's default gateway or change processor's IP, both methods are available, but we suggest to change processor's IP.

Method one: Change processor's IP.

Push the [MENU] button on front panel and go into items as below picture shows. Change processor's IP to be 192.168.1.100, confirm and restart the processor, then user can control on VSP 628PRO via windows control software.

Method two: Change router's gateway.

Type in 192.168.1.1 on the browser and go into router setting.

Type in default account and code (please refer to the router user manual for the information).

Go to router setting part and find out "LAN port setting", change the default value "192.168.1.1" to be "192.168.0.1".


Save the setting and restart the router, then user can control on VSP 628PRO via windows control software.

4.4 Using a VSP 628PRO with WEB Option

First, the formation of LAN Remote Control Platform: one Ipad or one Iphone, one router (with wireless functions, for example with a wireless-enabled VPN router models: Netcore 255 and 266. Volans VE760W, 982W.), one VSP 628PRO processor (can be more processors, as long as the network interface can be connected to the router)

The first step: LAN Physical Connection: connect VSP 628PRO and routers by CAT5, and connect routers by CAT5, please use the LAN Ethernet port, WAN port is only used to connect to external networks, it's not allowed to use in this step.

Connection diagram is as below:
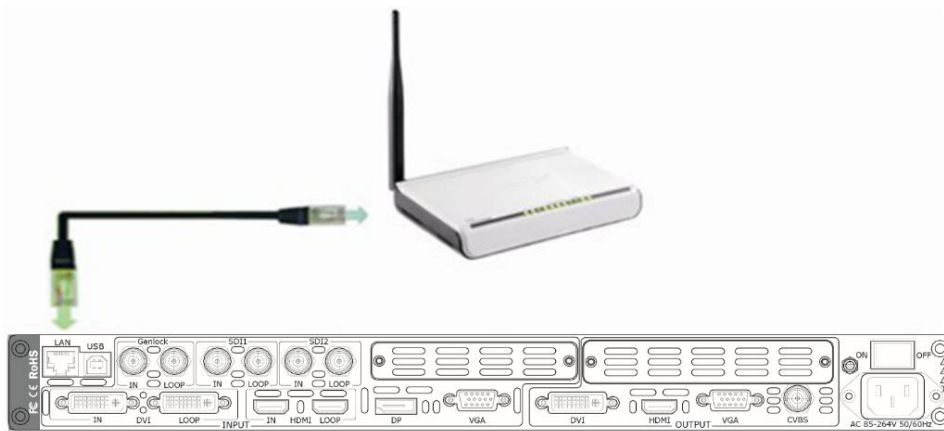
The second step: IP address setup. Please refer to IP Setup steps which in the "Connecting to an Ethernet Network" section. (Make sure that processors IP address and router IP address are in the same band.)

When users use Ipad or Iphone, use can use the Safari browser, enter the URL 192.168.0.100 (default) and run. If user using other types of devices will need to install the kernel **webkit browser** such as: **Apple Safari, Google Chrome or Maxthon browser**. The Installing package will provide Google Chrome browser (windows version).
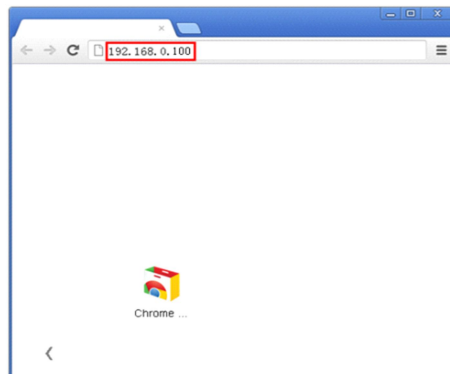
Note: Internet Explorer, Edge and Firefox are not supported.
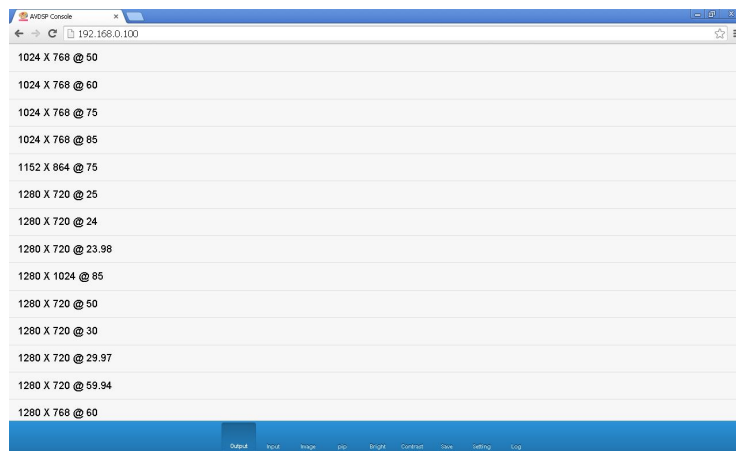
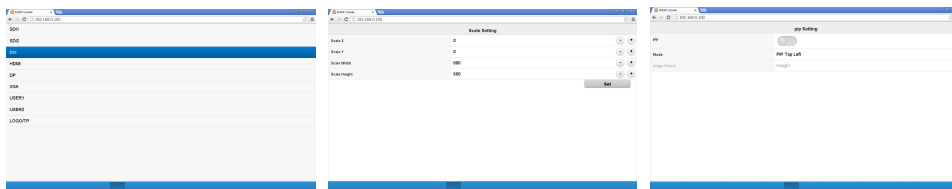The third step: Make connections.

Click icon, run Google Chrome browser, open the page to enter 192.168.0.100 (default) and run.

After connection successfully, Web page appears as VSP 628PRO system control interface.

Click on the toolbar below the control interface, then accesses setup menu, now WEB control on VSP 628PRO is available.

Chapter 5 Ordering Codes

5.1 Product

      100-0628-03-0   VSP 628PRO

      100-0628-04-0   VSP 628PRO-WEB

5.2 Options

5.2.1 Input Options

      190-0628-01-0   Dual CVBS/Composite Input Module

                           2 × CVBS

      190-0628-02-0   Dual USB Input Module

                           2 × USB

      190-0628-03-0   Dual VGA Input Module

                           2 × VGA

      190-0628-04-0   Dual HDMI Input Module

                           2 × HDMI

      190-0628-05-0   Dual DVI Input Module

                           2 × DVI

      190-0628-06-0   Dual SDI Input/Loop Module

                           2 × BNC for 3G-SDI each with loop

      190-0628-07-0   4K Display Port & HDMI Input Module

                           1 × DP1.2 + DP1.2 LOOP + HDMI1.4

5.2.2 Output Options

      190-0628-21-0   SDI / Fiber / HDBaseT Output Module

                           1 × Fiber + SDI + HDBaseT

      190-0628-22-0   CVBS/Composite Output Module

                           1 × CVBS

      190-0628-23-0   SDI Dual Output Module

                           2 × SDI

5.2.3 Accessories

RCRCPJ00011   DVI to VGA adapter

5.3 Sender Cards

RCRCPJ00090   Linsn TS801
RCRCPJ00091   Linsn TS802
RCRCPJ00110   Nova MSD300
RCRCPJ00112   Nova MSD600
RCRCFJ00133   Colorlight iT7

Chapter 6 Support

6.1 Questions and Troubleshooting

6.1.1 OLED Screen Prompts "No Core Board"

Frequently Asked Question	OLED Screen prompts "No Core Board"
Troubleshooting	**Upgrade the Device** Please visit our website or contact our sales for device program upgrade package and upgrade guide to upgrade the device.
	Confirm if the White Winding on Communication Board is Loose If upgrade repair can't solve this problem, please power off the device, take apart the top panel and remove four screws on core board, check if the white winding on the end of the communication board is loose, or take out it to clean and install it again.
	Confirm If the Core Board is Loose If it is not ok yet, please take out the core board, clean the interface and install it again. Make sure it is fasten and then power on for test. This operation need professional person. Make sure the electrostatic protection and electric shock protection. If it cannot solve again, please contact our sales.

6.1.2 No Display on LED Screen when Output HDMI to Sending Card, DVI Monitors or DVI Projectors

Frequently Asked Question	No Display on LED Display when Output HDMI to Sending Card, DVI Monitors or DVI Projectors
Troubleshooting	**Set DVI for HDMI Output Format** Some sending cards cannot support HDMI signal format. User need to set DVI for HDMI output format, operations are as follows: push the [MENU] button, then choose <OUTPUT>, turn the knob and choose <Color Space/Sample/Bit>, choose the HDMI output format as DVI.

6.1.3 Flash Point on LED Display when Output

Frequently Asked Question	Flash Point on LED Display when Output

	Change the DVI Cable or HDMI Cable
Troubleshooting	There is flash point on LED display when input sending card because of the DVI cable quality of good and bad are intermingled, which cause the sending card internal signal attenuation. Please change the 30~40CM DVI short cable.
	If there is HDMI input port on sending card, please change the HDMI cable with HDMI adapter, or DVI to HDMI cable, then connect the DVI output or HDMI output to the HDMI input.
	Add the Long-term Signal Amplify and Interface Protection Module
	Please contact our sales to buy the long-term signal amplify and interface protection module from our company, which can lengthen the transmission distance to 15M, and protect the output interface.

6.1.4 Android or iOS APP cannot Connect

Frequently Asked Question	Android or iOS APP cannot Properly Connected in Mobile Phone or Tablet Computer
Troubleshooting	**Confirm if the Device Install the Web Server Module** Confirm if the @ icon on the OLED module is white background and black text or black background and white text. If black background and white text, the device doesn't install the Web Server module, and without the APP and network control function. If necessary, please contact our sales to buy.
	Confirm if the Web Server Module Driver is Normal Push the [MENU] button, and choose <Tech Support>, turn the knob to choose <Version>, and confirm if show the Web COM/Web Server version number, if show (N/A), it means the device doesn't install the Web Server module, or the module driver is not normal. If it has installed the Web Server module, please contact our sales for the module driver or the driver installation instruction.
	Confirm if IP Conflict for Mobile Phone, Wireless Router and Device System default the device IP is 192.168.0.100, please check if the IP of wireless router is inconsistent with this IP, the IP will conflict if consistent, and unable to search the device and normal connection. Please change the device IP address, and make sure it is in the same network segment.

6.1.5 VGA Input Offset or cannot be Full Size Shown

Frequently Asked Question	VGA Input Offset or cannot be Full Size Shown
Troubleshooting	**Set Auto Adjust for VGA Input** Push the [MENU] button, then choose <INPUT>, turn the knob and choose <VGA ADJUST>, push the knob to confirm. Turn the knob and choose <AUTO ADJUST>, the auto adjust time is about 10 seconds. If auto adjust cannot solve the problem, please manually adjust in <VGA ADJUST>.

6.1.6 Show Blurred Screen when Rotate for I System Input

Frequently Asked Question	Show Blurred Screen when Rotate for I System Input
Troubleshooting	**Change the Input as P System** VSP 628PRO can not currently support the I system input rotate, please change the input as P system.

6.1.7 Can't Do Split for I System Input

Frequently Asked Question	Can't Do Split for I System Input
Troubleshooting	**Change the Input as P System** VSP 628PRO can not currently support the I system split, please change the input as P system, or choose the dual 2K mode to do split.

6.1.8 Show black Lines or Blurred Screen for DP Input

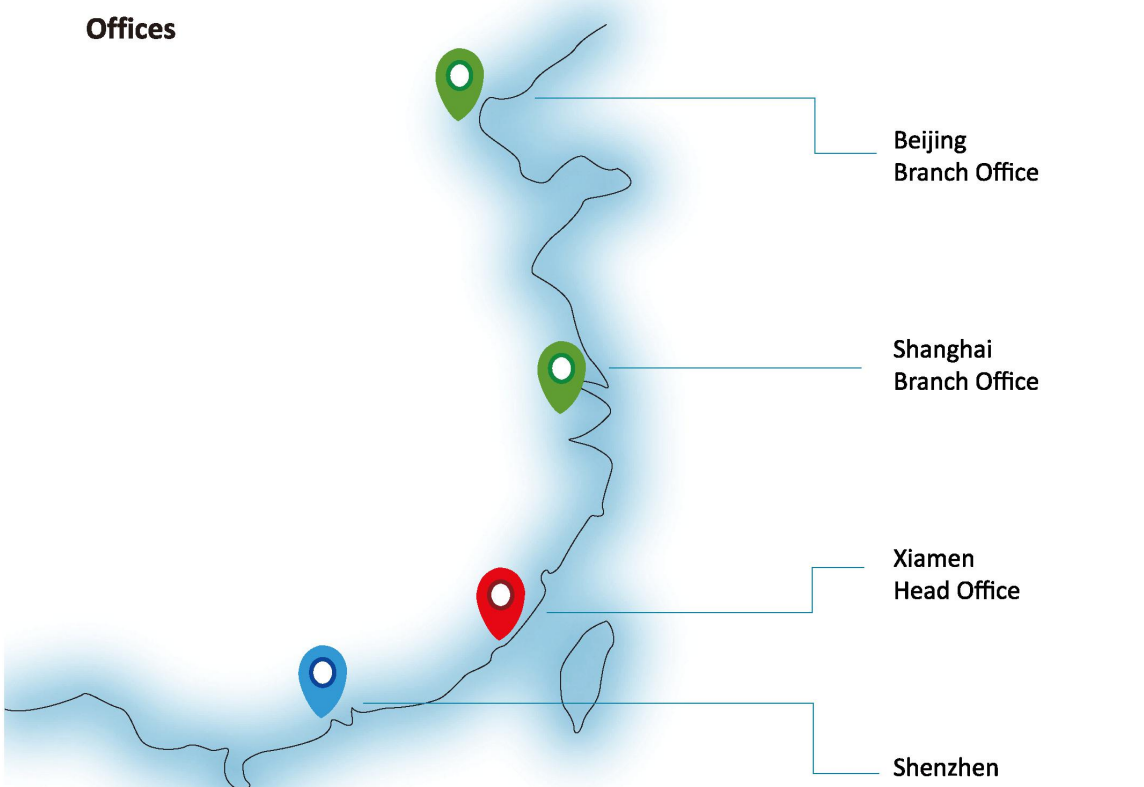| Frequently Asked Question	Show Black Lines or Blurred Screen for DP Input
Troubleshooting	**Switch the Signal Again** The LED screen shows the black lines or blurred screen because of the reasons such as some DP input resolutions, change the input resolution or system default DP. Please push the [DP] button again to confirm or switch to the other signal and then switch to DP signal.

6.1.9 Show Upgrade Error after Upgrade MCU Program

Frequently Asked Question	Show Upgrade Error after Upgrade MCU Program
Troubleshooting	**Upgrade the Program Again** VSP 628PRO only needs to upgrade the package after upgrade the program, and only for some old version devices need to upgrade the MCU program. Once upgrade the MCU program, the OLED panel will show writing tip during upgrading. Except it, the others don't need to upgrade the MCU program. If user upgrade the MCU program first, the device will can't be started. User need to contact our customer service for the version 2.13 package and upgrade to the latest package.

6.1.10 Software Upgrade Failed

Frequently Asked Question	Software Upgrade Failed
Troubleshooting	**Processing Bar Stops at About 90%** If processing bar stops at about 90% during _xx_Packge_xx.bin, please use _xx_MCU_xx.bin. After that, no need to upgrade _xx_Packge_xx.bin. (Please disconnect the input and output before upgrade).
	Processing Bar Stops at About 30% If processing bar stops at about 30% during _xx_Packge_xx.bin, please use _xx_MCU_xx.bin. After upgrade _xx_MCU_xx.bin, re-upgrade _xx_Packge_xx.bin. (Please disconnect the input and output before upgrade).

6.2 Contact Us

Offices

Beijing
Branch Office

Shanghai
Branch Office

Xiamen
Head Office

Shenzhen
Region Sales & Support
Centre

Web
www.rgblink.com

Phone
+86-592-577-1197

Email
Sales   sales@rgblink.com
Support   support@rgblink.com

Social Media

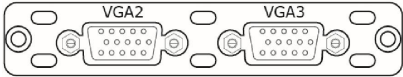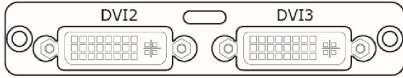@RGBLINK   /rgblink   +rgblink   /rgblink   rgblink

Chapter 7 Appendix
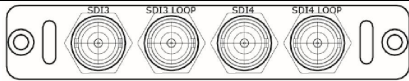
7.1 Specification

Genlock Input (Standard)	
Number of Inputs	1
Connector	Standard BNC Socket
Supported Standards	480i I 576i I 1080i59.94 I 1080i50 I 720p50 I 720p59.94 I 1080p50 I 1080p59.94 I 1080p60 I 1080psf23.98 I 1080psf24

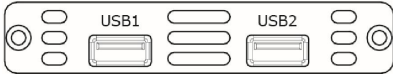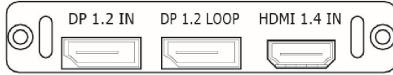| 3G-SDI Input (Standard)	
Number of Inputs	2
Connector	BNC
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)：1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)：1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)：1440×576/50 (2:1) Or dual link progressive, 625-line generic.
Balance	Belden 1694A cable: 150m at 2.97Gb/s 250m at 1.485Gb/s 480m at 270Mb/s

VGA DB15 Input (Standard)	
Number of Inputs	1
Connector	Standard DB15 Socket
Supported Standard	VGA-UXGA
Signal Level	R, G, B, Hsync, Vsync: 0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75 ohm black level: 300mV Sync-tip: 0V
Supported Resolution	VGA-UXGA (800×600@60 I 1024×768@60 I 1280×1024@60 I 1440×900@60 I 1600×1200@60)

DVI Input (Standard)	
Number of Inputs	1
Connector	Standard DVI-D socket
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60

	VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	DVI 1.0
DP Input (Standard)	
Number of Inputs	1
Connector	DisplayPort
Supported Resolution	Support resolution: WQXGA + (1920 x 1200), and color depth: 30/36 bit (each primary 10/12 bit)
Supported Bandwidth	10.8Gb/s
Format Standard	DP1.1
HDMI Input (Standard)	
Number of Inputs	1
Connector	HDMI standard type A interface
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Embedded Audio Channels	Select one from the two inputs
Format Standard	HDMI 1.3
Genlock Loop Out (Standard)	
Number of Loop Out	1
Connector	Standard BNC Socket
Supported Standards	480i I 576i I 1080i59.94 I 1080i50 I 720p50 I 720p59.94 I 1080p50 I 1080p59.94 I 1080p60 I 1080psf23.98 I 1080psf24
3G-SDI Loop Out (Standard)	
Number of Loop Out	2
Connector	BNC
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)： 1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)： 1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)： 1440×576/50 (2:1) Or dual link progressive, 625-line generic.
Balance	Belden 1694A cable:

	150m at 2.97Gb/s
	250m at 1.485Gb/s
	480m at 270Mb/s
HDMI Loop Out (Standard)	
Number of Loop Out	1
Connector	HDMI standard type A interface
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Embedded Audio Channels	Select one from the two inputs
Format Standard	HDMI 1.3
DVI Loop Out (Standard)	
Number of Loop Out	1
Connector	Standard DVI-D socket
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	DVI 1.0
HDMI Output (Standard)	
Number of Outputs	1
Connector	HDMI standard type A interface
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 1280×720@23.98 I 1280×720@24 I 1280×720@25 I 1280×720@29.97 I 1280×720@30 I 1920×1080@23.98 I 1920×1080@24 I 1920×1080@25 I 1920×1080@29.97 I 1920×1080@30. VESA: 800×600@60 I 1024×768@60 I 1024×768@75 I 1024×768@85 I 1280×720@60 I 1280×768@60 I 1280×800@60 I 1280×1024@60 I 1360×768@60 I 1366×768@60 I 1400×1050@60 I 1440×900@60 I 1600×1200@60 I 1680×1050@60 I 1920×1080@60 I 1920×1200@60 I 2048×1152@60 I 2560×816@60
Format Standard	HDMI 1.3
VGA Output (Standard)	
Number of Outputs	1
Connector	Standard DB15 Socket

Supported Resolution	VESA: 800×600@60 I 1024×768@60 I 1024×768@75 I 1024×768@85 I 1280×720@60 I 1280×768@60 I 1280×800@60 I 1280×1024@60 I 1360×768@60 I 1366×768@60 I 1400×1050@60 I 1440×900@60 I 1600×1200@60 I 1680×1050@60 I 1920×1080@60 I 1920×1200@60 I 2048×1152@60 I 2560×816@60
Signal Level	R, G, B, Hsync, Vsync: 0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75 ohm black level: 300mV Sync-tip: 0V
DVI Output (Standard)	
Number of Outputs	1
Connector	Standard DVI-D Socket
Signal Level	TMDS pw, 165MHz bandwidth
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 1280×720@23.98 I 1280×720@24 I 1280×720@25 I 1280×720@29.97 I 1280×720@30 I 1920×1080@23.98 I 1920×1080@24 I 1920×1080@25 I 1920×1080@29.97 I 1920×1080@30. VESA: 800×600@60 I 1024×768@60 I 1024×768@75 I 1024×768@85 I 1280×720@60 I 1280×768@60 I 1280×800@60 I 1280×1024@60 I 1360×768@60 I 1366×768@60 I 1400×1050@60 I 1440×900@60 I 1600×1200@60 I 1680×1050@60 I 1920×1080@60 I 1920×1200@60 I 2048×1152@60 I 2560×816@60
VGA Input (VGA Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
Number of Inputs	2
Connector	Standard DB15 Socket
Supported Standard	VGA-UXGA
Signal Level	R、G、B、Hsync、Vsync:0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75 ohm black level: 300mV Sync-tip: 0V
Supported Resolution	VGA-UXGA (800×600@60 I 1024×768@60 I 1280×1024@60 I 1440×900@60 I 1600×1200@60)
DVI Input (DVI Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
Number of Inputs	2
Connector	Standard DVI-D socket
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC,

	1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Signal Level	TMDS pwl, single pixel input,165MHz bandwidth
Format Standard	DVI 1.0
3G-SDI Input (SDI Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
3G-SDI Input	
Number of Inputs	2
Connector	BNC
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)：1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)：1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)：1440×576/50 (2:1) Or dual link progressive, 625-line generic.
Balance	Belden 1694A cable: 150m at 2.97Gb/s 250m at 1.485Gb/s 480m at 270Mb/s
3G-SDI Loop Out	
Number of Loop Out	2
Connector	BNC
Data Rate	2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)：1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)：1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)：1440×576/50 (2:1) Or dual link progressive, 625-line generic.

Balance	Belden 1694A cable: 150m at 2.97Gb/s 250m at 1.485Gb/s 480m at 270Mb/s
HDMI Input (HDMI Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
Number of Inputs	2
Connector	HDMI standard type A interface
Supported Resolution	SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60 VESA: 800×600@60 I 1024×768@60 I 1280×768@60 I 1280×1024@60 I 1600×1200@60 I 1920×1080@60
Embedded Audio Channels	Select one from the two inputs
Format Standard	HDMI 1.3
USB Input (USB Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
Number of Inputs	2
Connector	USB standard type A interface
Supported Standard	Support general Image and video formats
CVBS Input (CVBS Optional Module)	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
Number of Inputs	2
Supported Standard	PAL/NTSC
Signal Level	1Vpp±3db (0.7V Video+0.3v Sync) 75 ohm
Multiplex	480i, 576i
HDMI_DP_4K2K_IN Optional Module	
Interface Appearance	
Board Size	93.8(L)×17(W)（mm）
DP Input	
Number of Inputs	1
Connector	DisplayPort
Supported Resolution	VESA: 3840×2160×24 I 3840×2160×25 I 3840×2160×30 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60,

|	720p50/59.94/60
Supported Bandwidth	21.6Gb/s
Format Standard	DP 1.2
DP Loop Out	
Number of Loop Out	1
Connector	DisplayPort
Supported Resolution	VESA: 3840×2160×24 I 3840×2160×25 I 3840×2160×30 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60
Supported Bandwidth	21.6Gb/s
Format Standard	DP 1.2
HDMI Input	
Number of Inputs	1
Connector	HDMI standard type A interface
Supported Resolution	VESA: 3840×2160×24 I 3840×2160×25 I 3840×2160×30 SMPTE: 625/25/50 PAL, 525/29.97/59.94 NTSC, 1080P50/59.94/60 I 1080i50/59.94/60, 720p50/59.94/60
Format Standard	HDMI 1.4
F Output Optional Module	
Interface Appearance	
Board Size	114(L)×19.7(W)（mm）
3G-SDI Output	
Number of outputs	1
Connector	BNC interface
Signal level	800mV±10%
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1), 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)：1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)：1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)：1440×576/50 (2:1) Or dual link progressive, 625-line generic.
Equalization	Belden 1694A 100m HD 1.485G, 300m SD 270Mbps
SFP Fiber Output	
Number of outputs	1
Connector	LC interface

Supported Standard	SMPTE standard
10 Gigabit single-mode 10 km optical fiber module	
Wavelength of Light Transmission	1310nm
Transmission Rate	10G bps
Transmission Distance	10km
Transmission	Single mode twin-core
Hot Plug	Support
10 Gigabit multimode 300m optical fiber module	
Wavelength of Light Transmission	1270nm
Transmission Rate	10G bps
Transmission Distance	300km
Transmission	Multimode twin-core
Hot Plug	Support
HDBaseT Output	
Number of outputs	1
Connector	RJ45 Interface
Supported Standard	SMPTE standard
Transmission Rate	10G bps
Transmission Distance	120m
Standard	HDBaseT 1.0
3G-SDI Output (OS2Optional Module)	
Interface Appearance	
Board Size	114(L)×19.7(W)（mm）
Number of Outputs	2
Connector	BNC interface
Signal level	800mV±10%
Supported Standard	SMPTE 425M - 3G Level A and Level B Formats
Supported Resolution	SMPTE 425M (3G Level A) 4:2:2：1920×1080/60 (1:1) I 1920×1080/50 (1:1). SMPTE 425M (3G Level B DS1 and DS2) 4:2:2：1920×1080/60 (2:1) I 1920×1080/50 (2:1) SMPTE 274M (HD)：1920×1080I/60 (2:1) or 1920×1080/30 (PsF) I 1920×1080I/50 (2:1) or 1920×1080/25 (PsF) I 1920×1080/30 (1:1) I 1920×1080/25 (1:1) I 1920×1080/24 (1:1) I 1920×1080/24 (PsF) SMPTE 125M (SD)：1440×487/60 (2:1) SMPTE ITU-R BT.656 (SD)：1440×576/50 (2:1) Or dual link progressive, 625-line generic.
Equalization	Belden 1694A 100m HD 1.485G, 300m SD 270Mbps
CVBS Output (OC Optional Module)	

| Interface Appearance	
Board Size	114(L)×19.7(W)（mm）
Number of Outputs	1
Standard	PAL/NTSC
Signal Level	1Vpp±3db　(0.7V Video+0.3v Sync) 75ohm
Function	
Input channel configuration	Support each input channel signal programming configuration
PIP	Support PIP、PBP for any two inputs
Transition effects	Fade in and fade out switching between any two inputs
Extras	
Communication	USB　TCP/IP
Power Supply	85-264V IEC-3
Working Environment	0°C~45°C
Stored Environment	10% to 90%
Product Warranty	3 years parts and labor warranty

7.2 Software Upgrade

Windows Control Program Upgrade Guideline

1. Connect VSP 628PRO to PC via USB cable.
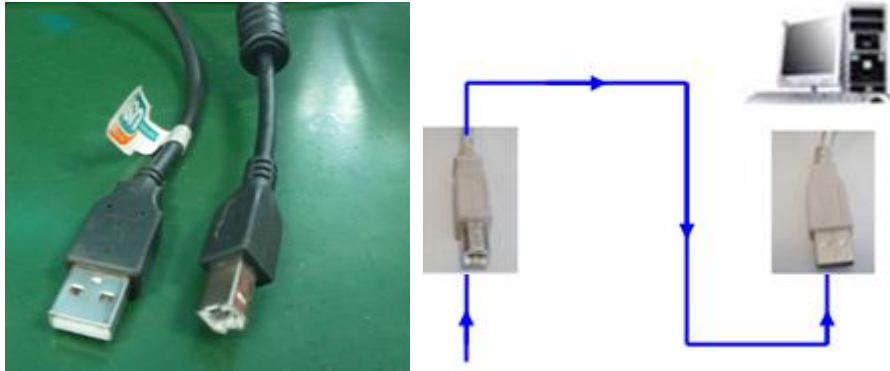
2. Download the windows control program (Please click the link

   http://www.rgblink.cn/en/products_detail.aspx?id=261 to the VSP 628PRO home page, and click the "Download" option to get the windows control program).
   The name of the upgrade software is VSP628PRO_Packge_XX.bin.

3. Power on VSP 628PRO.

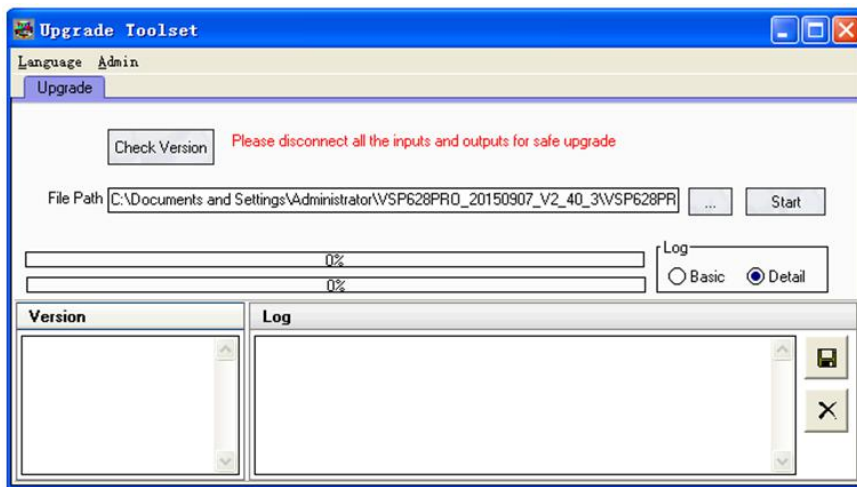4. Open the windows control program , like below:
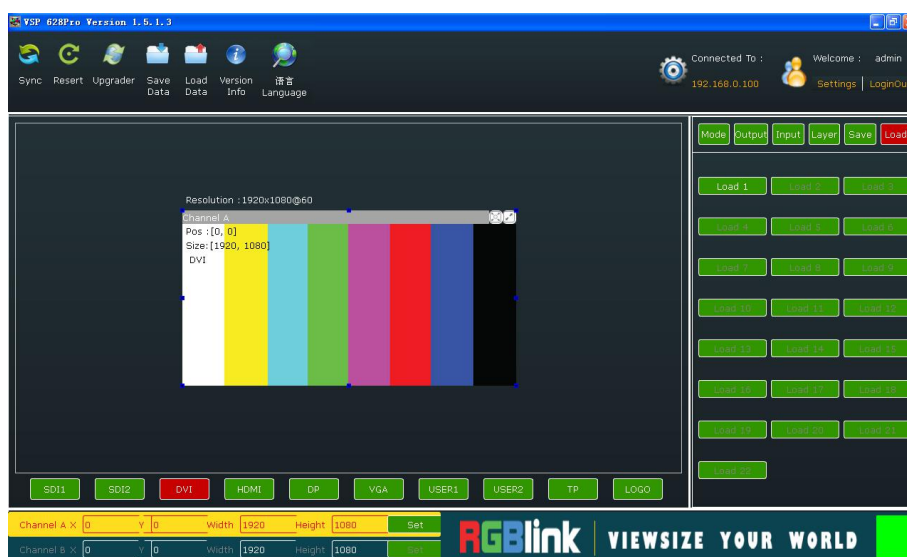
5. Click the Sync icon , which show the information of the windows control

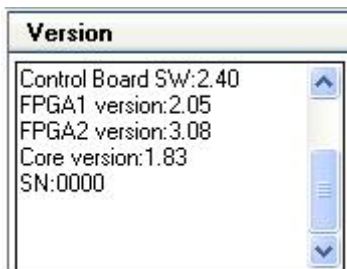program. The green square in the bottom right means the connection is successful, like

this: , while red is disconnect.

6. Click update icon , and open the upgrade toolset, like below:
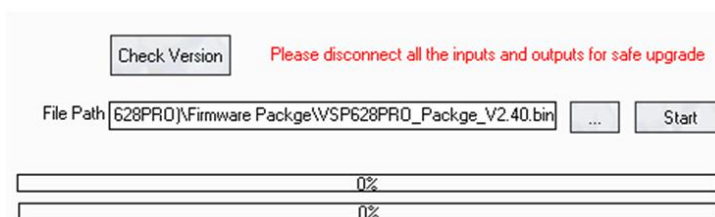

7. Click check version icon: , and check the version information

. (If the Control Board SW version is 2.13 or lower, it needs
to upgrade VSP628PRO_EDID_XX.bin)

8. Click the button , and choose the upgrade path, get the update file:

VSP 628PRO_Packge_Bata_xx.bin ready. Like below:

9. Click start icon [Start] to upgrade.

10. It takes 2~3 minutes to finish update. And a message "Down Load Success"

Rgblinkupgrade

Down Load Success

OK
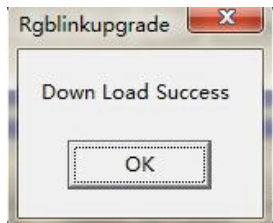
will pop out if finish.

11. Please re-power the VSP 628PRO after finished update. (Automatically factory reset when re-opening.)

7.3 Installing Options

VSP 628PRO is based on module based structure, user can install or replace the optional module according to actual need. The installation steps are as follows:
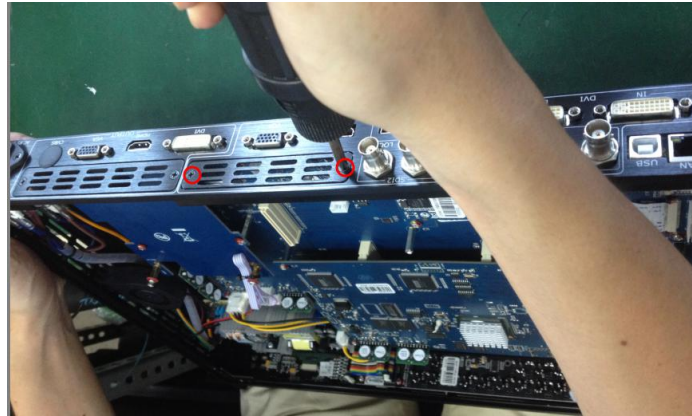
Install the Optional Module

1. Disconnect the power and all the signal and control cables.
2. Unscrew the 5 fixed screws on the top panel and remove the top panel (Figure 1):
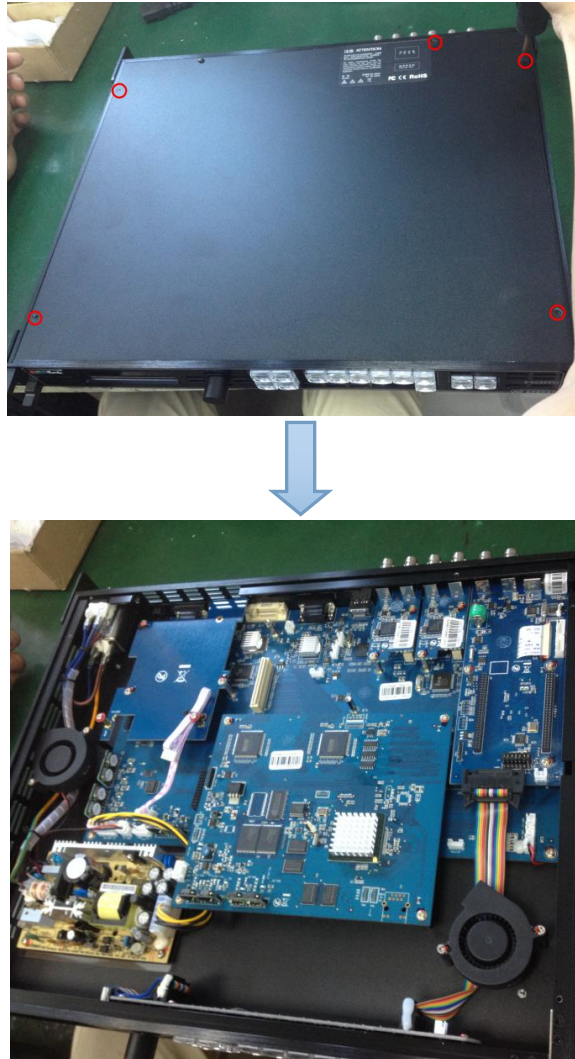
(Figure 1)

3. Unscrew the 2 fixed screws on input optional module slot, and pull out the input block (Figure 2):

(Figure 2)

4. Push the input module into the input module slot, and fix it with 2 fixed screws (Figure 3):

(Figure 3)

5. Embed the input module block in the input module slot, and fix it with 2 fixed screws (Figure 4):

(Figure 4)

6. Assemble the top panel, and fix it with 5 fixed screws that removed in step 2, then optional module installation is finished (Figure 5):

(Figure 5)

Note: Above instructions are only for input optional module. For VSP 628PRO, if user would install the output optional module, first, take apart the top panel, and unscrew the 3 fixed screws on sending card board to remove it (Figure 6).
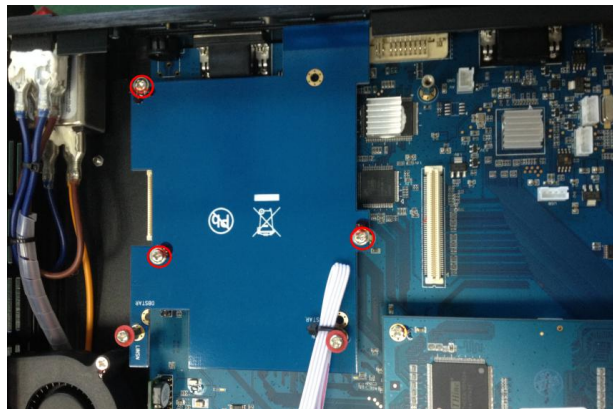
(Figure 6)

Then unscrew the 2 fixed screws on output optional module, and pull out the output module block (Figure 7).

(Figure 7)

Finally, push the output module into the output module slot, the install steps are the same as step 4 to step 6 in "**Install the Optional Module**" part.

Note: There is the case that some customers connect the power cord of the sending card to the F optional module, shown as Figure 8. This is not allowed to happen, or the F optional module will be damaged.

(Figure 8)

Replace the Optional Module

The install steps for optional module replacement are the same as above, but the following need to note:

1. Take apart the top panel, and unscrew the 2 fixed screws on input optional module to remove it (Figure 9).
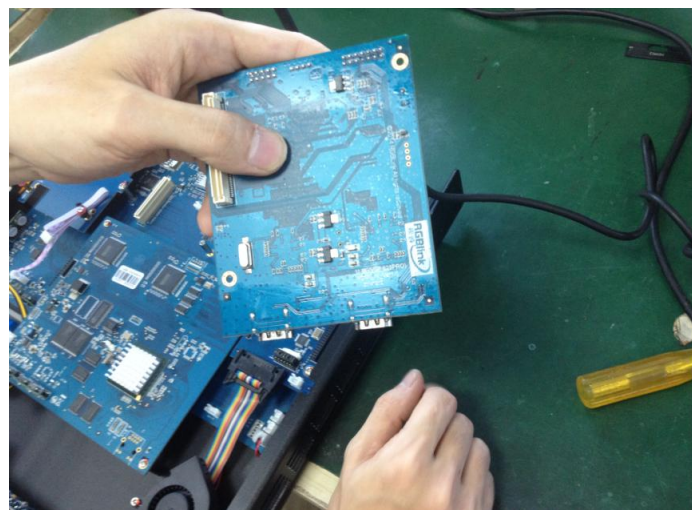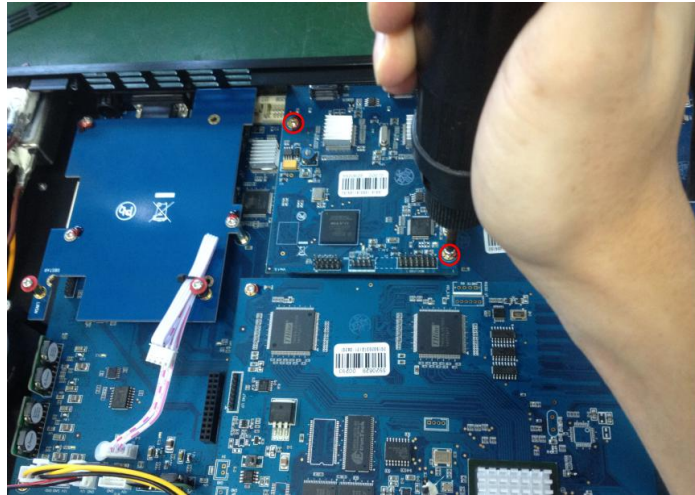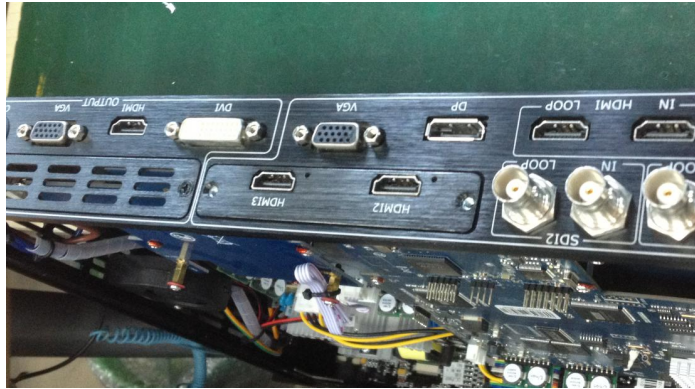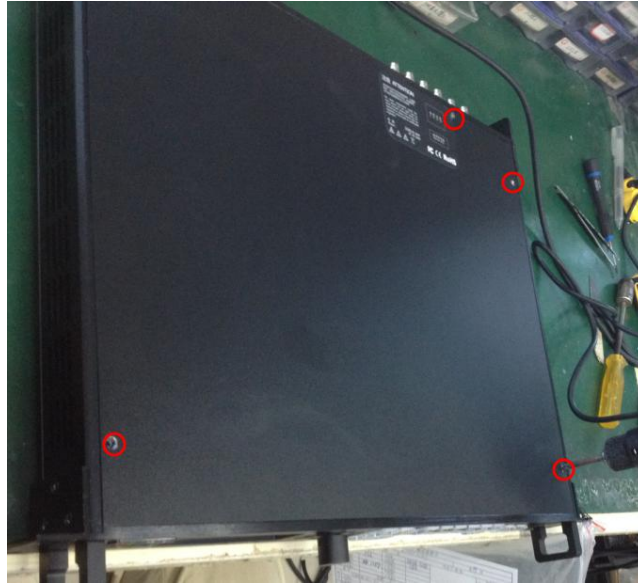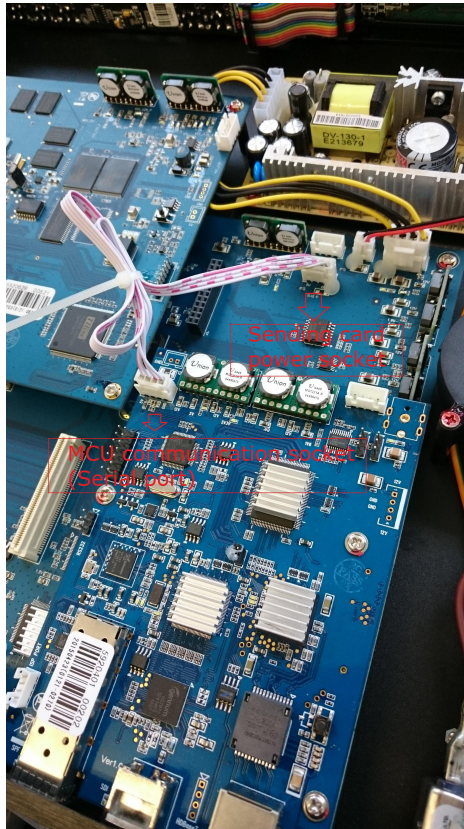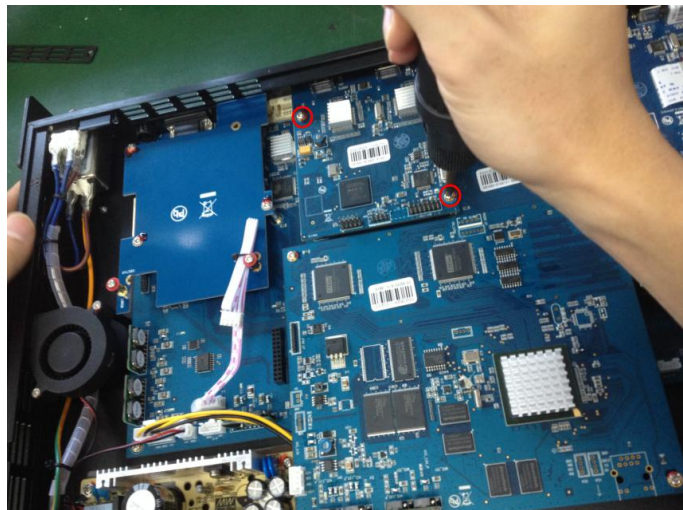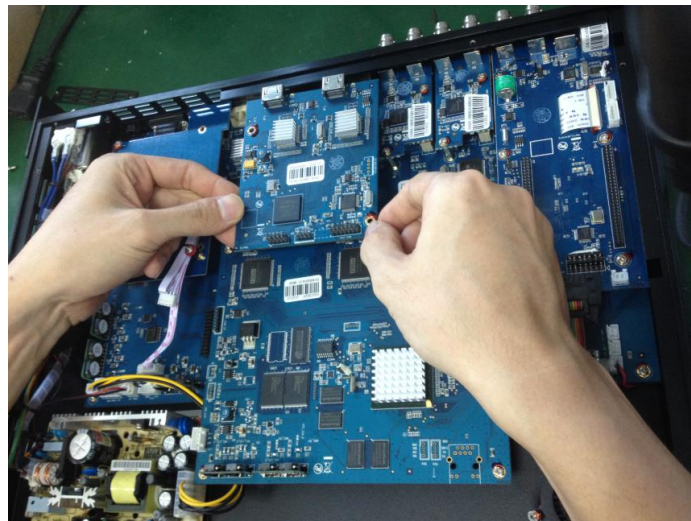
(Figure 9)

2. Unscrew the 2 fixed screws on input optional module, and pull out the input module block (Figure 10).

(Figure 10)

3. Push the input module into the input module slot, the install steps are the same as step 4 to step 6 in "**Install the Optional Module**" part.

Note: The install steps for output optional module replacement are the same as above.

7.4 Terms & Definitions

The following terms and definitions are used throughout this guide.

- **"ASCII":** American Standard for Information Interchange. The standard code consisting of 7-bit coded characters (8 bits including parity check) used to exchange information between data processing systems, data communication systems, and associated equipment. The ASCII set contains control characters and graphic characters.
- **"Aspect ratio":** The relationship of the horizontal dimension to the vertical dimension of an image. In viewing screens, standard TV is 4:3, or 1.33:1; HDTV is 16:9, or 1.78:1. Sometimes the ":1" is implicit, making TV = 1.33 and HDTV = 1.78.
- **"AV":** Audio visual, or audio video.
- A **"Background"** is an unscaled source, typically originating from a computer. A background source appears at the system's lowest priority — visually in back of all other sources.
- **"Baudrate":** Named of J.M.E. Baudot, the inventor of the Baudot telegraph code. The number of the electrical oscillations per second, called baud rate. Related to, but not the same as, transfer rate in bits per second (bps).
- **"Blackburst":** The video waveform without the video elements. It includes the vertical sync, horizontal sync, and the chroma burst information. Blackburst is used to synchronize video equipment to align the video output. One signal is normally used to set up an entire video system or facility. Sometimes it is called House sync.
- **"BNC":** Bayonet Neill-Concelman. A cable connector used extensively in television and named for its inventors. A cylindrical bayonet connector that operates with a twist-locking motion. To make the connection, align the two curved grooves in the collar of the male connector with the two projections on the outside of the female collar, push, and twist. This allows the connector to lock into place without tools.
- **"Brightness":** Usually refers to the amount or intensity of video light produced on a screen without regard to color. Sometimes called "black level.
- "**CAT 5**": Category 5. Describes the network cabling standard that consists of four unshielded twisted pairs of copper wire terminated by RJ-45 connectors. CAT 5 cabling supports data rates up to 100 Mbps. CAT 5 is based on the EIA/TIA 568 Commercial Building Telecommunications Wiring Standard.
- **"Color bars":** A standard test pattern of several basic colors (white, yellow, cyan, green, magenta, red, blue, and black) as a reference for system alignment and testing. In NTSC video, the most commonly used color bars are the SMPTE standard color bars. In PAL video, the most commonly used color bars are eight full field bars. In the computer, the most commonly used color bars are two rows of reversed color bars.
- **"Color burst":** In color TV systems, a burst of subcarrier frequency located on the back porch of the composite video signal. This serves as a color synchronizing signal to establish a frequency and phase reference for the chroma signal. Color

burst is 3.58 MHz for NTSC and 4.43 MHz for PAL.

● **"Color temperature":** The color quality, expressed in degrees Kelvin(K), of a light source. The higher the color temperature, the bluer the light. The lower the temperature, the redder the light. Benchmark color temperature for the A/V industry include 5000°K, 6500°K, and 9000°K.

● **"Contrast ratio":** The radio of the high light output level divided by the low light output level. In theory, the contrast radio of the television system should be at least 100:1, if not 300:1. In reality, there are several limitations. In the CRT, light from adjacent elements contaminate the area of each element. Room ambient light will contaminate the light emitted from the CRT. Well-controlled viewing conditions should yield a practical contrast ratio of 30:1 to 50:1.

● **"DVI":** Digital Visual Interface. The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video.

● **"EDID":** Extended Display Identification Data – EDID is a data structure used to communicate video display information, including native resolution and vertical interval refresh rate requirements, to a source device. The source device will then output the optimal video format for the display based on the provided EDID data, ensuring proper video image quality. This communication takes place over the DDC – Display Data Channel.

● **"Ethernet":** A Local Area Network (LAN) standard officially known as IEEE 802.3. Ethernet and other LAN technologies are used for interconnecting computers, printers, workstations, terminals, servers, etc. within the same building or campus. Ethernet operates over twisted pair and over coaxial cable at speeds starting at 10Mbps. For LAN interconnectivity, Ethernet is physical link and data link protocol reflecting the two lowest layers of the OSI Reference Model.

● **"Frame":** In interlaced video, a frame is one complete picture. A video frame is made up of two fields, or two sets of interlaced lines. In a film, a frame is one still picture of a series that makes up a motion picture.

● **"Gamma":** The light output of a CRT is not linear with respect to the voltage input. The difference between what you should have and what is actually output is known as gamma.

● **"HDMI" - High – Definition Multimedia Interface:** An interface used primarily in consumer electronics for the transmission of uncompressed high definition video, up to 8 channels of audio, and control signals, over a single cable. HDMI is the de facto standard for HDTV displays, Blu-ray Disc players, and other HDTV electronics. Introduced in 2003, the HDMI specification has gone through several revisions.

● **"HDSDI":** The high-definition version of SDI specified in SMPTE-292M. This signal standard transmits audio and video with 10 bit depth and 4:2:2 color quantization over a single coaxial cable with a data rate of 1.485 Gbit/second. Multiple video resolutions exists including progressive 1280x720 and interlaced 1920x1080 resolution. Up to 32 audio signals are carried in the ancillary data.

● **"JPEG" (Joint photographic Expects Group):** Commonly used method of lossy

compression for photographic images using a discreet cosine transfer function. The degree of compression can be adjusted, allowing a selectable tradeoff between storage size and image quality. JPEG typically achieves 10:1 compression with little perceptible loss in image quality. Produces blocking artifacts.

● **"MPEG":** Motion Picture Expect Group. A standard committee under the auspices of the International Standards Organization working on algorithm standards that allow digital compression, storage and transmission of moving image information such as motion video, CD-quality audio, and control data at CD-ROM bandwidth. The MPEG algorithm provides inter-frame compression of video images and can have an effective compression rate of 100:1 to 200:1.

● **"NTSC":** The color video standard used in North America and some other parts of the world created by the National Television Standards Committee in the 1950s. A color signal must be compatible with black-and-white TV sets. NTSC utilizes an interlaced video signals, 525 lines of resolution with a refresh rate of 60 fields per second (60 Hz). Each frame is comprised of two fields of 262.5 lines each, running at an effective rate of 30 frames per second.

● **"Operator":** Refers to the person who uses the system.

● **"PAL":** Phase Alternate Line. A television standard in which the phase of the color carrier is alternated from line to line. It takes four full pictures (8 fields) for the color-to-horizontal phase relationship to return to the reference point. This alternation helps cancel out phase errors. For this reason, the hue control is not needed on a PAL TV set. PAL, in many transmission forms, is widely used in Western Europe, Australia, Africa, the Middle East, and Micronesia. PAL uses 625-line, 50-filed (25 fps) composite color transmission system.

● **"PIP":** Picture-in-Picture. A small picture within a larger picture created by scaling down one of the images to make it smaller. Each picture requires a separate video source such as a camera, VCR, or computer. Other forms of PIP displays include Picture-by-Picture (PBP) and Picture-with-Picture (PWP), which are commonly used with 16:9 aspect display devices. PBP and PWP image formats require a separate scaler for each video window.

● **"Polarity":** The positive and negative orientation of a signal. Polarity usually refers to the direction or a level with respect to a reference (e.g. positive sync polarity means that sync occurs when the signal is going in the positive direction).

● **"RJ-45":** Registered Jack-45. A connector similar to a telephone connector that holds up to eight wires, used for connecting Ethernet devices.

● "**RS-232**": An Electronic Industries Association (EIA) serial digital interface standard specifying the characteristics of the communication path between two devices using either DB-9 or DB-25 connectors. This standard is used for relatively short-range communication and does not specify balanced control lines. RS-232 is a serial control standard with a set number of conductors, data rate, word length, and type of connector to be used. The standard specifies component connection standards with regard to the computer interface. It is also called RS-232-C, which is the third version of the RS-232 standard, and is functionally identical to the CCITT V.24 standard.

- **"Saturation":** Chroma, chroma gain. The intensity of the color, or the extent to which a given color in any image is free from white. The less white in a color, the truer the color or the greater its saturation. On a display device, the color control adjusts the saturation. Not to be confused with the brightness, saturation is the amount of pigment in a color, and not the intensity. Low saturation is like adding white to the color. For example, a low-saturated red looks pink.

- **"Scaling":** A conversion of a video or computer graphic signal from a starting resolution to a new resolution. Scaling from one resolution to another is typically done to optimize the signal for input to an image processor, transmission path or to improve its quality when presented on a particular display.

- **"SDI":** Serial Digital Interface. The standard based on a 270 Mbps transfer rate. This is a 10-bit, scrambled, polarity independent interface with common scrambling for both component ITU-R 601 and composite digital video and four channels of (embedded) digital audio.

- **"Seamless Switching":** A feature found on many video switchers. This feature causes the switcher to wait until the vertical interval to switch. This avoid a glitch (temporary scrambling) which normally is seen when switching between sources.

- **"SMPTE":** Society of Motion Picture and Television Engineers. A global organization, based in the United States, that sets standards for baseband visual communications. This includes film as well as video and television standards.

- **"S-Video":** A composite video signal separated into the luma ("Y" is for luma, or black and white information; brightness) and the chroma ("C" is an abbreviation for chroma, or color information).

- **"Sync":** Synchronization. In video, sync is a means of controlling the timing of an event with respect to other events. This is accomplished with timing pulses to insure that each step in a process occurs at the correct time. For example, horizontal sync determines exactly when to begin each horizontal scan line. Vertical sync determines when the image is to be refreshed to start a new field or frame. There are many other types of sync in video system.(Also known as "sync signal" or "sync pulse.")

- **"TCP/IP":** Transmission Control Protocol/Internet Protocol. The communication protocol of the Internet. Computers and devices with direct access to the Internet are provided with a copy of the TCP/IP program to allow them to send and receive information in an understandable form.

- **"USB":** Universal Serial Bus. USB was developed by seven PC and telecom industry leaders (Compaq, DEC, IBM, Intel, Microsoft, NEC, and Northern Telecom). The goal was easy plug-and-play expansion outside the box, requiring no additional circuit cards. Up to 127 external computer devices may be added through a USB hub, which may be conveniently located in a keyboard or monitor. USB devices can be attached or detached without removing computer power. The number of devices being designed for USB continues to grow, from keyboards, mice, and printers to scanners, digital cameras, and ZIP drives.

- **"VESA":** Video Electronics Standards Association. A nonprofit number organization dedicated to facilitating and promoting personal computer graphics through

improved standards for the benefit of the end-user. www.vesa.org

● **"VGA":** Video Graphics Array. Introduced by IBM in 1987, VGA is an analog signal with TTL level separate horizontal and vertical sync. The video outputs to a 15-pin HD connector and has a horizontal scan frequency of 31.5 kHz and vertical frequency of 70 Hz (Mode 1, 2) and 60 Hz (Mode 3). The signal is non-interlaced in modes 1, 2, and 3 and interlaced when using the 8514/A card (35.5 kHz, 86 Hz) in mode 4. It has a pixel by line resolution of 640×480 with a color palette of 16 bits and 256,000 colors.

● **"YCrCb":** Used to describe the color space for interlaced component video.

● **"YPbPr":** Used to describe the color space for progressive-scan (non-interlaced) component video.

7.5 Revision History

The table below lists the changes to the Video Processor User Manual.

Format	Time	ECO#	Description	Principal
V1.0	2014-12-02	0000#	Release	Vira
V1.1	2015-04-27	0001#	1. Add the input optional module. 2. Update the menu tree. 3. Update the windows control program.	Vira
V1.2	2015-06-08	0002#	1. Add the input optional module. 2. Update the menu tree. 3. Update the windows control program. 4. Update the common questions and solutions.	Vira
V1.3	2015-07-17	0003#	Add "Optional Module Installation and Replacement Instruction"	Vira
V1.4	2015-07-27	0004#	1. Update the menu tree. 2. Update the windows control program. 3. Update the specification.	Vira
V1.5	2015-08-17	0005#	1. Update the company logo. 2. Update the split instruction. 3. Update the common questions and solutions.	Vira
V1.6	2015-09-25	0006#	1. Update the diagram. 2. Update the menu tree. 3. Update the windows control program.	Vira
V1.7	2015-10-16	0007#	1. Update the windows control program. 2. Update the "Software Upgrade".	Vira
V1.8	2016-03-10	0008#	1. Update the back panel. 2. Update the dimension drawing. 3. Update the menu tree. 4. Add "How to Realize LED Screen Connection". 5. Update the fax number. 6. Update the company logo.	Vira
V1.9	2016-04-20	0009#	Update the style and structure.	Vira

| V2.0 | 2016-08-02 | 0010# | 1. Update the cover picture.
2. Update the menu tree.
3. Update the specification. | Vira |
| V2.1 | 2018-11-02 | 0011# | 1.Update default mode | Many |