VSP 516 Series User Manual

RGBlink

The pictures and data in the user manual are reference only, check the real product please!

CONTENT

1.0 Safety

The general safety information in this summary is for operating person. Any requirement, please feel freely to contact our service engineer.

	**Power Source** This product is intended to operate from a power source between 85~265 volts rms . This product is only workable under correct power condition, which is already mark on the back panel of the power.
	**High Voltage** There are many high voltage components inside.
	**Do not Remove Covers and Panels** Do not remove Covers in any conditions. There are not any spare components inside for maintenance, so do not maintain this product by userrselves, any requirement, please feel free to contact our service engineer. Keep heavy device from power cord.
	**Grounding the Product and Use the Proper Fuse** 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.
	**Keep away from Magnet, Motor, TV and Transformer.**
	**Guard Against Damp** Keep using inside clean and dryness environment, once the device get wet, must remove power cord right now.
	**Keep away Exploder** Do not operate the device inside dangerous and easy explosive gas, which it may make fire, blast or something without expectation.
	**Keep away Pour Liquid and Fragment** It is forbid to pour liquid, metal fragment or anything else inside this device to avoid fire and other accident. Once that happens, must remove power cord and try to make it clean before power on again.

2.0 Specification

AVDSP series video processors are designed by the latest high performance image processing technology. AVDSP can handle following video without limit, include CVBS (Composite) 、S-Video (YC)、YCbCr、YPbPr、RGBHV (VGA) 、DVI-D、HDMI、SDI (SD-SDI、HD-SDI) and VOIP (Copper RJ45) .

Compare table of AVDSP as following.

RGBlink AVDSP series video processor compared table

Parameters		VSP516S	VSP 516H	VSP618	VSP618B	VSP618C	VSP618D	VSP709	VSP 320
Input	COMPOSITE	3x	3x	3x	3x	3x	3x	6x	–
	SVIDEO	1x	1x	1x	1x	1x	1x	2x	–
	SD component YCbCr	1x	1x	1x	1x	1x	1x	2x	–
	SD-SDI	1x	–	–	2x	–	–	–	–
	HD-SDI(SD Compatible)		–	–		–	–	–	–
	DVI	1x	1x	1x	1x	1x	1x	2x	1x
	HDMI	1x	1x	–	–	2x	–	2x	–
	VGA	1x	1x	1x	1x	1x	1x	2x	–
	HD Component YPbPr	1x	1x	1x	1x	1x	1x	2x	–
	Analog Audio	10x	10x	–	–	–	–	2x	–
Output	COMPOSITE	–	–	–	–	–	–	–	–
	SVIDEO	–	–	–	–	–	–	–	–
	SD component YCbCr	–	–	–	–	–	–	–	–
	HD component YPbPr	–	–	–	–	–	–	–	–
	SDI (HD compatible)	–	–	–	–	–	–	1x	–
	VGA	1x	1x	1x	1x	1x	1x	1x	–
	DVI	1x	1x	1x	1x	1x	1x	1x	4x
	HDMI	–	–	–	–	–	1x	1x	–
	Analog Audio	1x	1x	–	–	–	–	1x	–
Function & service	Fade in fade out	–	–	√	√	√	√	√	–
	image processing	10bit	10bit	10bit	10bit	10bit	10bit	10bit	–
	Motion Compensation	nice	nice	good	good	good	good	good	–
	Brightness	√	√	√	√	√	√	√	–
	Gamma	√	√	√	√	√	√	√	–
	Remote control	√	√	√	√	√	√	√	–
	Schedule play	√	√	√	√	√	√	√	–
	Dual display	√	√	√	√	√	√	√	–
	Quad Display	–	–	–	–	–	–	√	–
	Pixel based scale	√	√	√	√	√	√	√	–
	Image shift	–	√	√	√	√	√	√	–
	Subtitle overlay	–	–	√	√	√	√	√	–
	Logo overlay	–	–	√	√	√	√	√	–
	Output Resolution	1280×1024	1920×1080	2048×1152	2048×1152	2048×1152	2048×1152	2048×1152	5760*900;1
	Image refresh frequency	60Hz	60Hz,75Hz	50Hz,60Hz, 70Hz,75Hz,85Hz	50Hz,60Hz, 70Hz,75Hz,85Hz	50Hz,60Hz, 70Hz,75Hz,85Hz	50Hz,60Hz, 70Hz,75Hz,85Hz	50Hz,60Hz, 70Hz,75Hz,85Hz	60Hz
	image exchange	√	√	√	√	√	√	√	–
	image copy	√	√	√	√	√	√	√	–
	Front panel Operation	32key	32key	32key	32key	32key	32key	32key	–
	digital clock	√	√	√	√	√	√	√	–
	control interface	USB+RS232+TCP/IP	USB+RS232+TCP/IP	USB+RS232+TCP/IP	USB+RS232+TCP/IP	USB+RS232+TCP/IP	USB+RS232+TCP/IP	RS232+TCP/IP	RS232
	control software	√	√	√	√	√	√	√	√
	Standard 1U rack mount	√	√	√	√	√	√	√	√
	Net weight	2Kg	2Kg	2Kg	2Kg	2Kg	2Kg	2Kg	1Kg
	CE certification	√	√	√	√	√	√	√	√
	FCC certification	√	√	√	√	√	√	√	√
	RoHS certification	√	√	√	√	√	√	√	√

2.1 Parameters

Composite BNC Input	
Number of Inputs	3
Supported Standards	PAL/NTSC; 480i,576i
Signal Level	1Vpp±3db (0.7V Video+0.3v Sync) 75ohm
S-video DIN4 Input	
Number of Inputs	1
Supported Standards	PAL/NTSC; 480i,576i
Signal Level	Y:1Vpp±3dB (0.7V Video+0.3v Sync) 75ohm U/V:0.7Vpp±3dB 75ohm
YPbPr BNC Input	
Number of Inputs	BNC*3
Supported Standards	Anologue HD Input 480i,576i,480p,576p,720p50,720i60,1080i50,1080p50 1080i50,1080i60
Signal Level	Y:1Vpp±3dB (0.7V Video+0.3v Sync) 75ohm Pb/Pr:0.7Vpp±3dB 75ohm
VGA DB15 Input	
Number of Inputs	1
Connector	Standard DB15 socket
Supported Standards	VGA-UXGA; 1024×768×60, 800×600×60, 640×480×60
Signal Level	R、G、B、Hsync、Vsync:0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75ohm black level : 300mV Sync-tip : 0V
DVI Input	
Number of Inputs	1
Connector	Standard DVI-I socket
Supported Resolution	SMPTE : 625/25 PAL, 525/29.97 NTSC, 625/50p PAL, 525/59.94p NTSC:1080i50,1080i59.94/60,720p50,720p59.94/60 VESA : 800×600×60Hz , 1024×768×60Hz , 1280×768×60Hz ,1280×1024×60Hz ,1600×1200×60Hz ,1920×1080×60Hz , 1920×1080×50Hz

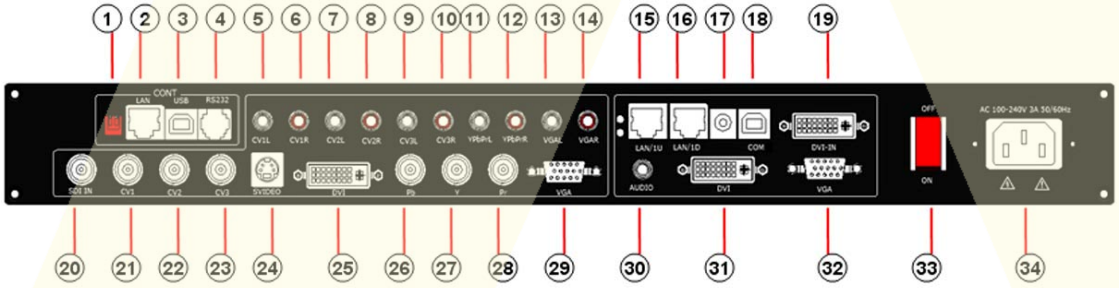
Signal Level	TMDS pwl , single pixel input , 165MHz bandwidth
Standard	HDMI 1.3
SDI Input (Optional module)	
Number of Inputs	1
Connector	BNC
Data Rate Range	19.4Mbps~1.5Gbps
Supported Standards	ITU-R BT.656,ITU-R BT.601,SMPTE 259M, SMPTE 292, SMPTE 297
Equalization)	Belden 1694A 100M HD1.485G , 350m SD 270Mbps
Audio Input	
Number of Inputs	10
Connector	Standard RCA socket
Audio Standard	48Kbps 24bit balance analog audio
DVI Output	
Number of Inputs	1
Connector	Standard DVI-I Interface
Signal Level	TMDS pwl , 165MHz bandwidth
Supported Standards	VESA：800×600×60Hz，800×600×75Hz，1024×768×60Hz ,1024×768×75Hz ,1280×1024×60Hz, 1920×1080P×60Hz
VGA Output	
Number of Inputs	1
Connector	Standard DB15 socket
Supported Standards	VESA：800×600×60Hz，800×600×75Hz，1024×768×60Hz ,1024×768×75Hz ,1280×1024×60Hz, 1920×1080P×60Hz
Signal Level	R、G、B、Hsync、Vsync:0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75ohm black level : 300mV Sync-tip : 0V
Audio Output	

Number of Outputs	1
Connector	Standard 1/4” socket
Audio Standard	48Kbps 24bit balance analog audio
Function	
Source Switch	support every signal alpha key operation
PIP	PIP for SD with HD and HD with HD
AV Sync	supported
Extras	
Communication	RS232 USB TCP/IP
Power Supply	85-264V 2A IEC-3
Working Environment	0°C~45°C
Stored Environment	10% to 90%
Product Warranty	1 year

Note:	VSP 516H is different from VSP 516 as following output resolution.
	800×600×75Hz , 1024×768×75Hz , 1280×768×60Hz
	1920×1080p×60Hz
Specifications are subject to change without notice.	

3.0 Connection

3.1 VSP 516 Back Panel



1、Dial the code switch ;

2、10/100M interface (copper RJ45). Used to connect the computer by 568B-568A twist-pair;

3、USB interface , Used to connect the computer ;

4、RS232 interface (RJ11) for AVDSP processor. Used to connect the computer;

5-14、Audio interface, support audio signals from DVD player or audio sources;

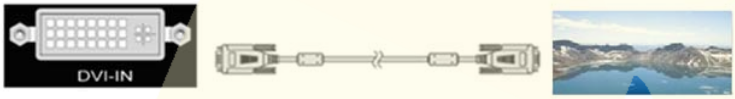
15-16、Gigabit copper port, connect to LED screen;

17、Gigabit Transmitter card power interface, not use inside case;

18、Gigabit Transmitter card USB control interface.

19、Gigabit Transmitter card DVI input , connect to DVI output of VSP 516.

(This Connection does not support hot-plugging)



20、SDI Input BNC, used to support SD/HD SDI input。Input the video signal from the HD player, HD projector. (SDI input is the optional module)

Note:	VSP 516S can install a SDI input module to support SD-SDI and HD-SDI signal, compared to VSP 516 and VSP 516H.

21-23、Composite input interface , Composite BNC. Used to input composite signal (PAL, NTSC, SECAM compatible) ;

24、S-Video DIN 4, used to input S-Video signal (PAL, NTSC, SECAM compatible) ;

25、DVI input interface。Input the video signal from computer, DVI signal generator. Connect to the same DVI interface on VSP 516;

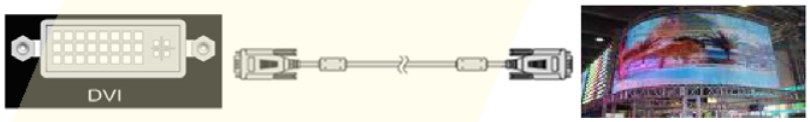
（This Connection does not support hot-plugging）

26-28、R/Pr G/Y B/Pb BNC, used to support SD/HD analog video input, up to 1080p60;

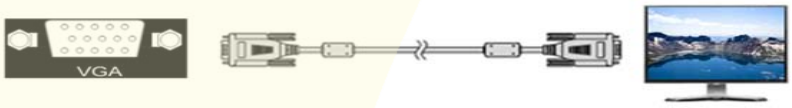
29、VGA input interface, DB-15, used to support Analog RGB input; Connect to the VGA interface on the VSP processor.

30、AUDIO output interface2，connect to the audio player。

31、DVI output interface，connect to the monitor or LED screen which has DVI interface.（This Connection does not support hot-plugging）



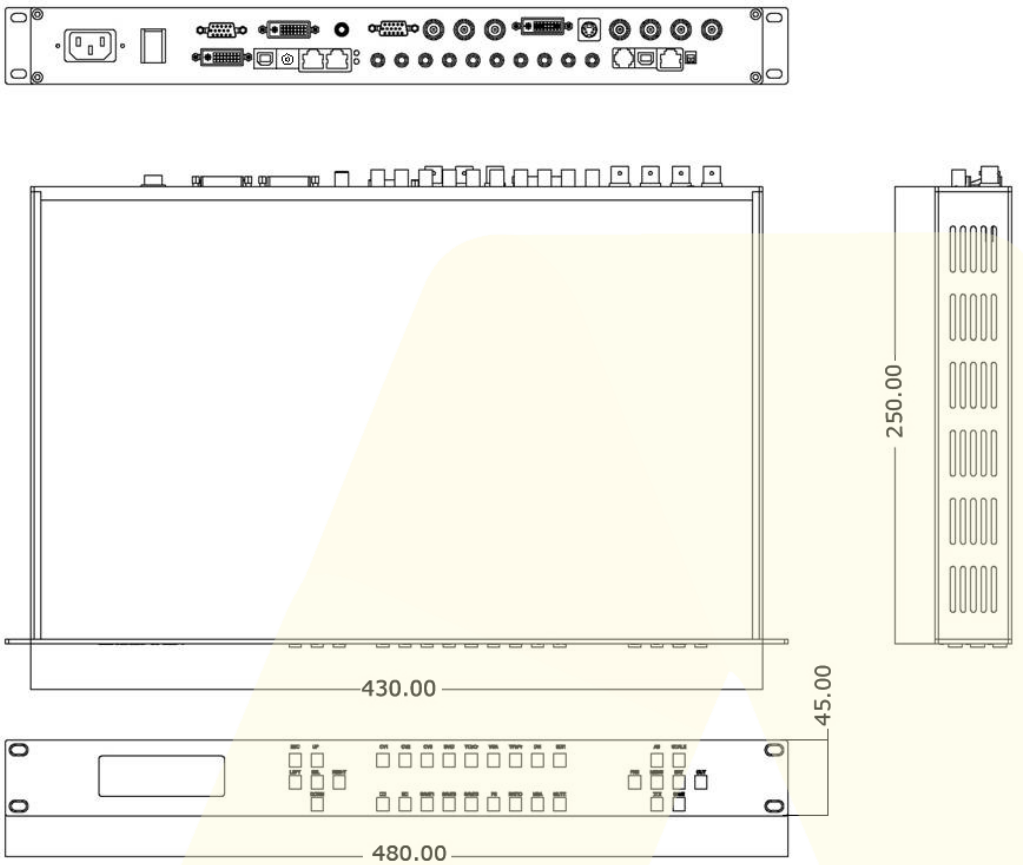
32、VGA output interface, connect to the monitor, projector and so on；



33-34、Switch and power. It must use IEC-3 power line. Always ground to avoid electric shock.

3.2 How to install

VSP 516 frame size



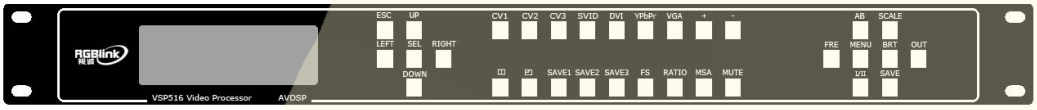
Note:	VSP 516S has the same frame size of VSP 516H and VSP 516S;

4.0 Front Panel Keyboard Operation

Insert power cord and push power to ON position. LCD module on the front panel will show RGBLINK and go into self verification before it load last setting config and send processed image to the target monitor. For the first setup, CV1 input is default source. With front panel keyboard, user can operate VSP with menu display on LCD module.

4.1 VSP 516 series Operator Guideline

VSP 516 series front panel as following :



1. LCD Module;

2. Keyboard:

ESC: push to exit from current choice item;

SEL: push to confirm the current choice item;

UP: push to select up items in LCD menu;

DOWN: push to select down in LCD menu;

LEFT : push to select the left items

RIGHT : push to select the right items

CV1 : switch to composite 1 input

CV2 : switch to composite 2 input ;

CV3 : switch to composite 3 input ;

SVID : switch to SVideo ;

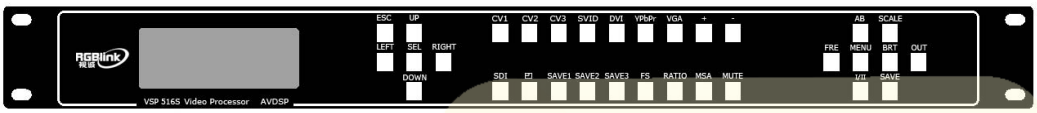
VGA: switch to analog RGB input ;

YPbPr: switch to high definition component ,

DVI: Switch to DVI input

+:Switch to amplify the audio;

-:Switch to down scale the audio;



SDI: SDI input, compatible with HD/SD SDI, push to switch to SDI input;

Note:	VSP 516S can install a SDI input module to support SD-SDI and HD-SDI signal, compared to VSP 516 and VSP 516H.

PBP: Switch to show two pictures in side by side mode;

Note:	VSP516S front panel remove PBP mode button to SDI button; VSP516 and VSP516H front panel keep PBP mode button, but remove SDI button.

PIP:Switch to show picture in picture on the screen. CV1 is the default small picture on the top left corner, DVI is the default picture with full screen.

SAVE1 : switch to use the user-defined mode 1;

SAVE2 : switch to use the user-defined mode 2;

SAVE3 : switch to use the user-defined mode 3;

FS : switch to selet full screen or zoom view, just for single picture mode;

RATIO : switch to select aspect ratio 4 : 3 or 16 : 9;

MSA : switch to select the audio channel which send to output in multi picture mode;

MUTE : Switch to select mute sound or return;

MENU:push to go to main menu;

FRE:push to freeze the video image or live again; (Freeze→Live→Freeze)

AB: Channel Switch, only works under the PBP mode. Push it to switch between

the picture of main channel and the picture of subchannel. For instance, if processor now works under subchannel mode, user can switch channels in subchannel; be under subchannel mode if you push Reset button.

Note:	AB in VSP 516 doesn't support Fade-In-Out.

SCALE: push to go to between scale→zoom→crop→scale mode ;

BRT : push to adjust the brightness and the contrast ratio, push to enter to the relevant Menu, and then push the UP and DOWN to adjust the brightness and the contrast ratio.

OUT: push to select the output format by using the UP and DOWN.

I / II: push to set single or dual channel

SAVE: push to save current config.

4.2 Video Processor Menu

System menu as follows;

Fig. 1

The first line shows VSP 516.

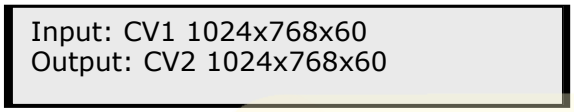
Push the right and left direction key to select the left or right menu. Before the menu item, if there is a * sign, means the menu item has been selected, you can push the Select key to enter it.

The ↑ on the right means you can select the menu items by pushing the up and down direction key.

User can check the information of the equipment in "Dev Info" menu (including the manufacturer、serial-number);

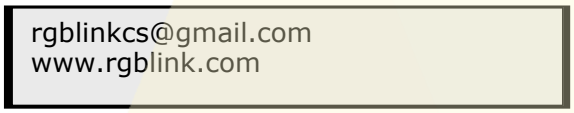
User can get more service and support according to the serial-number.

User can check current input and output sources in Dev Info menu also.



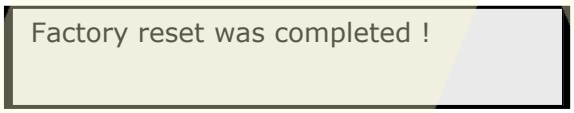
Touch UP/DOWN to check customer service E-mail and web site address;

User can visit company web site for more product information.

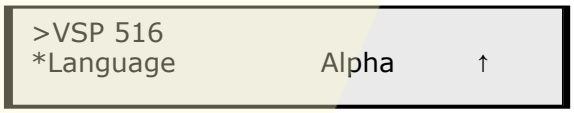


Touch UP/DOWN to check System time

User can do a Factory Settings in Recall menu, after successful reset you will see the menu as follows:

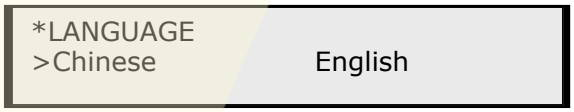


Push the MENU to enter the main menu, then push up and down direction key, the menu as follows:



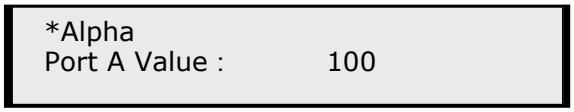
Push the LEFT/RIGHT to select the relevant submenu.

LANGUAGE submenu as follows :



Push UP/DWON to enter Alpha setup, user can set value from 0 to 100, 0 means video or graphic would be disappear and 100 means normal;

Port A and Port B stand for two channel picture;



Push OUT to enter the Output menu, push the UP or DOWN to select different output resolution, push OK to confirm the output resolution.

Advance submenu as follows :

Note:	☐ VSP516H and VSP 516S support the minus pixel shift function, which VSP 516 can not support;
	☐ VSP516H and VSP 516S can not support pixel shift on the resolution 1920×1080P×60Hz.

Pixel shift to minus:

Press UP/DOWN and select the menu as shown in Figure 1:

Figure 1

Press LEFT/RIGHT and select XY_Pos to enter the submenu of adjusting effective area;

XY_Pos : The sub-menu of which is used to adjust the position of overall effective area shown on the screen or monitor.

H_BLANK: The overall effective area can be moved around by adjusting the value of H_BLANK.

V_BLANK: The overall effective area can be moved up and down by adjusting the value of V_BLANK.

Step : user can set the step of scale;

HSize : set the horizontal size of the image;

VSize : set the vertical size of the image;

HPos : set the horizontal position of the image;

VPos : set the vertical position of the image ;

User can set size and position of the screen simply, Mainly applies to LED screens users. After setting screen parameter , the user choice PIP or PBP operation, display picture can directly shows on corresponding screen。

Push the□/□to enter Single or Dual channel menu , push the UP / DOWN to select the single or dual channel, push SEL to confirm the single channel or dual channel work state;

Select the input channel, push the UP/DOWN, and SEL to confirm the different input channel. User can also push the channel name on the keyboard to go into the input channel.

AB in VSP 516 is used to enable channel if dual channel mode.

OR :

Push SCALE to set the size and position of the image, push UP/DOWN and

SEL to confirm the relevant items;

Step : user can set the step of scale;

HSize : set the horizontal size of the image;

VSize : set the vertical size of the image;

HPos : set the horizontal position of the image;

VPos : set the vertical position of the image ;

Note:	When shown in one single image, the ratio between the horizontal and the vertical of the image should be equal to or less than 3.
	When shown in dual image, there is a limit of aspect ratio of the image in the left side: The horizontal of the image in the left side should be larger than that of the image in the right side. This rule still need to be followed even if the images are dragged to the opposite.

Push the FRE to freeze the live image or live the freeze image.

OR :

Push BRT to set the brightness and the contrast ratio:

OR :

Push SAVE and then push SAVE1 or SAVE2 to save the operation to SAVE1 or

SAVE2;Push SAVE1 or SAVE2 to execute relative operation after user save the operation sucessfully.

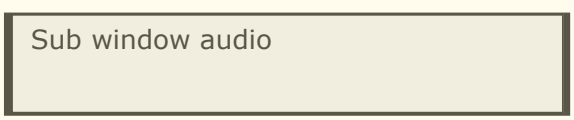
Note:	Add prompt to save function
	For VSP 516 series, when user push the SAVE key, the SAVE1、SAVE2 and SAVE3 lights on the front panel will go on at the same time, it reminds user must press SAVE1 or SAVE 2 to finish the final save function.

Touch FS button can realize screen switch between scale mode and full screen mode.

Touch RATIO button , set screen width and height.

MSA : touch the main sub-channel audio and audio channel switching button,main channel will play sound.

Touch again, sub-channel will play sound.



MUTE : mute the equipment, shown as the picture:

Touch MUTE again will revovery to play sound