VSP 112U

User Manual

- Manual #: RGB-RD-UM-V112U E001
- Revision: V1.0

VSP 112U·User Manual

Thank you for choosing our products!
In order to allow you to learn how to use the video processor quickly, we bring you the detailed user manual. You can read the introduction and directions before using the video processor, please read all the information we provide carefully to use our products correctly.

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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.

Terms in This Manual and Equipment Marking

WARNING

Highlight an operating procedure, practice, condition, statement, etc, which, if not strictly observed, could result in injury or death of personnel.

Note

Highlights an essential operating procedure, condition or statement.

CAUTION

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Amendment Records

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

Format	Time	ECO#	Description	Principal
V1.0	2014-08-20	0000	Release	Vira

CONTENT

1. Brief Introduction

This chapter is designed to introduce you to the VSP 112U User Manual. Areas to be covered are:

- Chapter Structure
- How to Use The Manual
- Terms and Definitions
- System Overview
- Application Questions

Chapter Structure

The following chapters provide instructions for all aspects of VSP 112U operations.

How to Use the Manual

Followings are important tips for streamlining your use of this User Manual in its electronic “PDF” form.

Navigation

Use Acrobat Reader’s “bookmarks” to navigate to the desired location. All chapter files have the same bookmark structure for instant navigation to any section. Please note:

- Extensive hyperlinks are provided within the chapters.
- Use Acrobat’s “**Go to Previous View**” and “**Return to next View**” buttons to trace your complete navigational path.

- Use the “**Previous Page**” and “**Next Page**” buttons to go to the previous or next page within a file.
- Use Acrobat’s extensive search capabilities, such as the “**Find**” tool and “**Search Index**” tool to perform comprehensive searches as required.

Table of Contents and Index

Use the Table of Contents bookmarks to navigate a desired topic. Click any item to instantly jump to that section of the guide. You can also use the **Index** to jump to specific topics within a chapter. Each page number in the **Index** is a hyperlink.

General Operations

To ensure trouble-free operation, please follow all procedures as listed below:

- For detailed installation instructions, refer to chapter 3 “Hardware Installation” on page 34.
- For communication software control guide, refer to Chapter 5, “Communication Software Control Guide” on page 53.
- For system setup and operations, refer to Chapter 6, “System Setup and Operations” on page 79.

Should you have any questions regarding the installation or operation of VSP 112U, please consult with the factory. Refer to Appendix B “Contact information” on page 106.

Term and 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 sub carrier 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 includes 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.

1. Brief Introduction

Terms and Definitions

- **“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 exist including progressive 1280x720 and interlaced 1920x1080 resolutions. Up to 32 audio signals are carried in the ancillary data.
- **“JPEG” (Joint photographic Expects Group):** Commonly used method of loss 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 allows 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.
- **“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.

- **“Operator”:** Refers to the person who uses the 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 avoids 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 base band 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.

System Overview

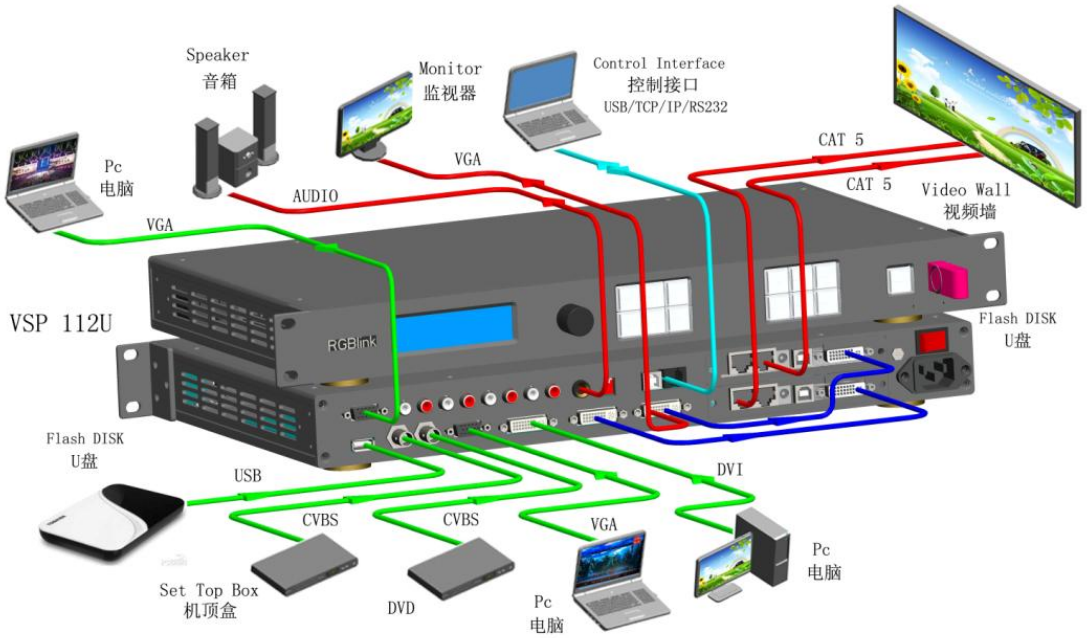
VSP 112U is one of the most basic LED audio & video processor developed by RGBlink, it supports inputs including 2×composite (CVBS), 2×VGA (VGA1 compatible with YPbPr), 1×DVI, 2×USB (for playing media files, including video and graphic), 4×balanced analog audio, and outputs including 2×DVI, 1×VGA and 1×balanced analog audio.

VSP 112U integrates with advance broadcast quality motion adaptive de-interlacing engine, natural color reproduction and dynamic range adjustment capacity, and enhances pixel based scaling especially for splicing function.

VSP 112U builds in with the 3rd generation media player for strengthen full HD quality media reproduction and schedule ability. This features its marketing range from installation, rental & stage and branding advertisement.

Application Questions

RGBlink offers solutions to demand technical problems. Any application questions, or required further information, please contact with our Customer Support Engineers. Refer to Appendix B for contact details.



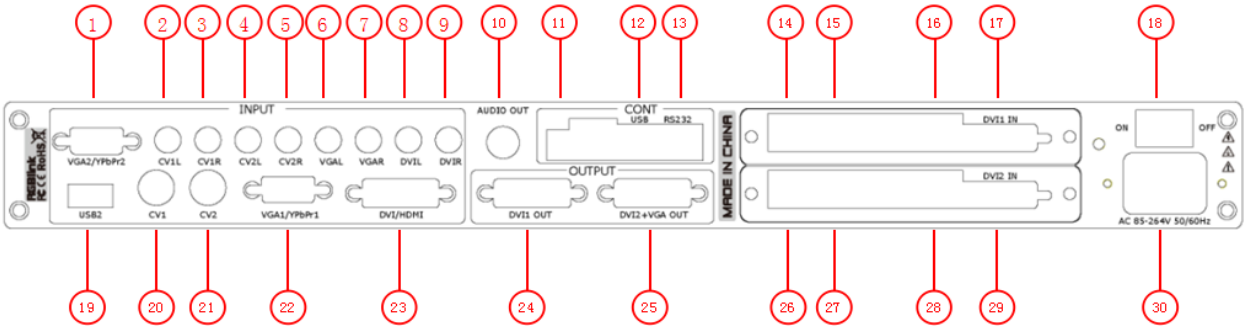
2. Hardware Orientation

In This Chapter

This chapter provides detailed information about the VSP 112U hardware. The following topics are discussed:

VSP 112U Back Panel

The figure below illustrates the professional interface and control signals of VSP 112U back panel.



NO	INTERFACE	NO	INTERFACE
2~9	Audio Input RCA port	18	Switch
10	Audio Output BNC port	19	USB input port
11	Dial Switch	20.21	CVBS Input BNC port
12	USB Interface of Device	1.22	VGA Input DB15 port
13	RS232 Interface	23	DVI Input DVI-I
14.15.26.27	10/100M Interface RJ45	24	DVI Output DVI-I
16.28	USB Interface of Sending Card	25	DVI+VGA DVI-I Output
17.29	DVI Input Port of Sending Card	30	Power IEC-3 port

CONT Interface

11: Dial Switch

If the two dial switches are upwards, the device is in normal work, and if they are downwards, the device is in upgrade state. OLED module light is off when the device is in upgrade state. Some of the button lights turn on, and the device will not work.

12: USB Interface

Used to connect the windows control program or device upgrade.

13: RS232 Interface

Used to connect the windows control program or device upgrade.

INPUT Interface

It includes 2 CVBS inputs by BNC interfaces, 2 USB interface (USB1 is in the front panel), 1 DVI-I interface, 2 VGA input by DB15 interface, and 4 balanced analog audio Inputs.

2~9: Audio Input

Audio input, receive the audio signals from the audio signals of the DVD player, hardware player and digital box.

19: USB Input

USB input interface, can access the USB device or mobile hard disk with USB storage function. Support general image formats.

20. 21: CVBS Input

CVBS input, input standard video signal from players, cameras etc., supported resolution 480i and 576i via BNC. Supported standards include: PAL, NTSC and SECAM.

1. 22: VGA Input

VGA interface, input the video signal from HD player and computer, etc. Compatible with YPbPr via the DB15 interface.

23: DVI Input

DVI input, input the video signal from computer, DVI signal generator. Can be compatible with HDMI 1.3.

(This connection can not support hot-plugging).

2. Hardware Orientation

VSP 112U Back Panel

OUTPUT Interface

14.15.26.27: 10/100M Interface RJ45

Gigabit copper port, used to connect LED display.

16.28: USB Control Port of Sending Card

17.29: DVI Input

Input the DVI out originating from other video processors.

(This DVI connector does not support hot-plugging)

10: Audio Output

It is used to access the speakers or audio power amplifier system.

24: DVI Output

Connect to the monitor or LED display which has DVI interface.

(This DVI connector does not support hot-plugging)

25: DVI +VGA DVI Output

DVI +VGA output via DVI connector connect to the monitor or LED display which has DVI interface.

(This DVI connector does not support hot-plugging)

DVI +VGA, VGA output connector can be connected to monitor or projector which has VGA interface.

Note

Via  adapter, can connect with DVI-based or VGA-based equipment, and via

 DVI to VGA adapter, can output VGA only.

2. Hardware Orientation

VSP 112U Back Panel

Switch and Power

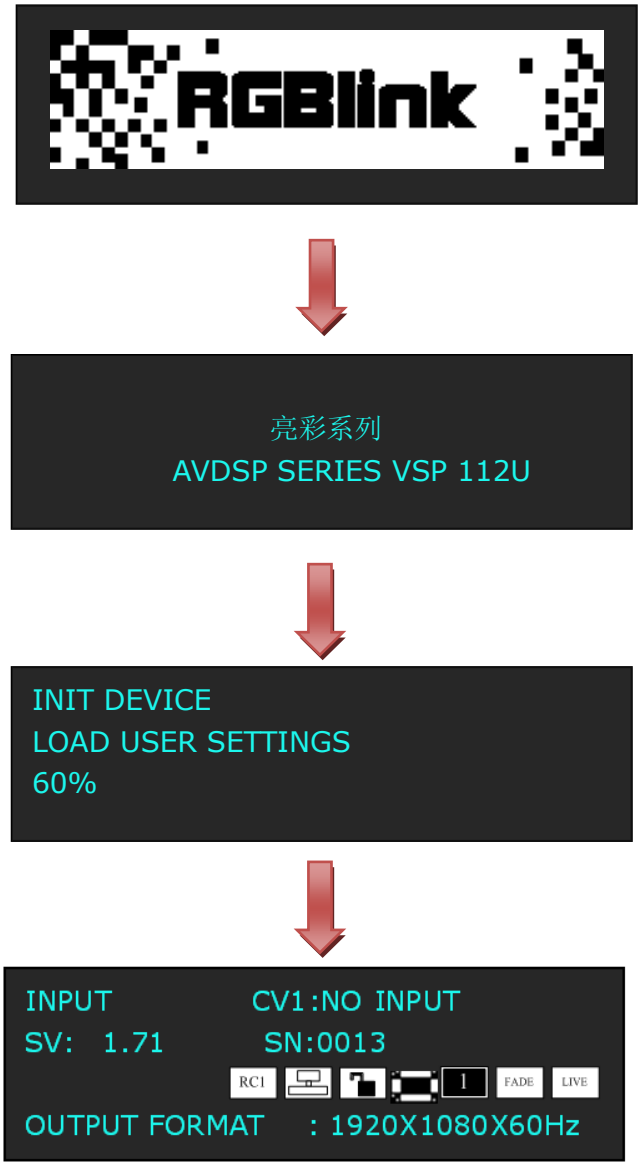
18.30：Power Interface and Switch

AC 85-264V 3.8A 50/60Hz IEC-3 Power Interface.

VSP 112U Front Panel

Insert power cord and push power to ON position. OLED module on the front panel will show RGBlink and go into its self verification before it load last setting config and send processed image to the target monitor. For the first setup, CV1 input is the default source. With front panel keyboard, user can operate VSP 112U through the menus on OLED module.

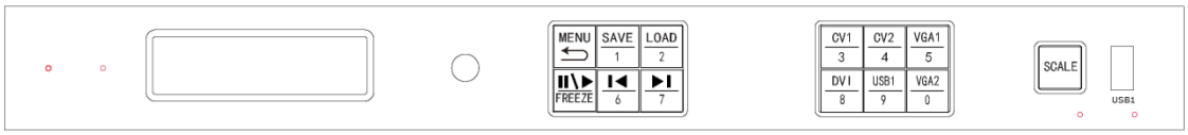
VSP 112U front panel as shown in figure:



2. Hardware Orientation

VSP 112U Front Panel

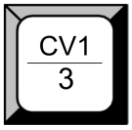
VSP 112U front panel is as following:



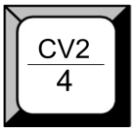
OLED Panel

Used to show button menu and menus for interactive communication.

Signal Keys



CV1 input selection button, its LED light turns on, output will be switched to this channel.



CV2 input selection button, its LED light turns on, output will be switched to this channel.

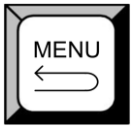
VGA input selection button, its LED light turns on, output will be switched to this channel.

DVI input selection button, its LED light turns on, output will be switched to this channel.

USB1 input selection button, its LED light turns on, output will be switched to this channel.

VGA2 input selection button, its LED light turns on, output will be switched to this channel.

Function Keys



Menu button. Push the [MENU] button to enter the menu items. Turn the knob to select the relevant submenu.

For details, please refer to MENU in menu orientation.

2. Hardware Orientation

VSP 112U Front Panel

ESC reuse function button. Push the [MENU] button to exit the menu.

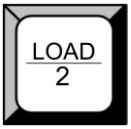
Effect switch function button. Push the [MENU] button two times to enter the effect switch function menu.

For details, please refer to: Special Effect Switching.

Save button: Push it to enter SAVE mode, turn the knob to select save position or push the user mode buttons which light up from 0~9 directly.

Currently, it supports 10 saving modes from 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, which means SAVE1~10. The OLED menu will show Finish after finish saving.

For details, please refer to MENU SAVE Function and How to Save the Parameter.

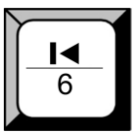


LOAD button: Push it to enter LOAD mode, turn the knob or push the number button which light up to load the saved parameters.

Currently, it supports 10 loading modes from 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 means LOAD user mode 1~10. The OLED menu will show Finish after finish loading.

For details please refer to MENU LOAD Function and How to Load the Saved Parameter.

When input USB signal, push the button, the video or image will stop or play. If input other signals, push the button, its LED light lights, and the current image is freeze. Push the button again, its LED light is off, and exit freeze Function.



Move previous button, push the button to play the previous USB video file.

2. Hardware Orientation

VSP 112U Front Panel

Move next button, push the button to play the next USB video file.

Scale function button: Image size adjustment, push the button to enter the scale menu. Turn the knob to select the relevant submenu.

For details please refer to SCALE MENU in menu orientation and How to Scale the Size and Position of the Single Image.

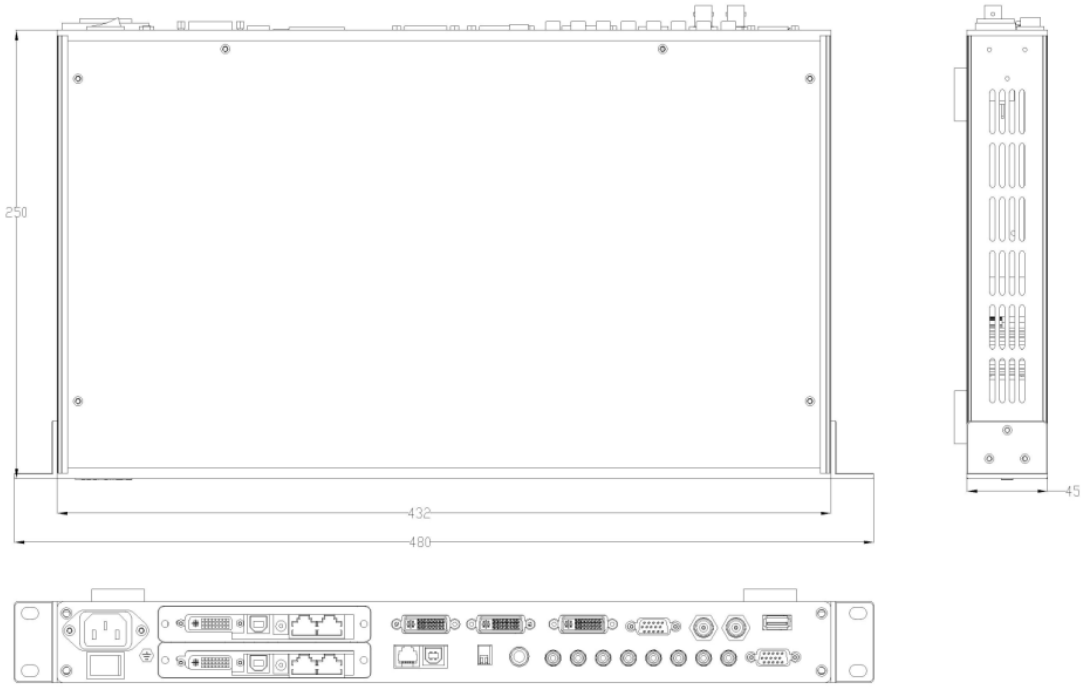
USB input interface: Can access the USB device or mobile hard disk with USB storage function. Support general image and video formats.

3. Hardware Installation

In This Chapter

This chapter provides comprehensive installation instruction for VSP 112U hardware:

Following is the size of VSP 112U for your reference.



Safety Precautions

For all VSP 112U 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 112U process 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 112U should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

4. Menu Orientation

In This Chapter

This chapter describes all VSP 112U processor menus, including how they are accessed, the functions that are available, and descriptions of each menu tree (in block diagram format).

The following topics are discussed:

- **MENU**
  - OUTPUT FORMAT
  - SCREEN PARAMETER
  - PICTURE
  - IMAGE QUALITY
  - ADJUST
  - TEXT OVERLAY
  - PIP
  - AUDIO
  - SYSTEM
  - LANGUAGE
  - LOCK FRONT PANEL
  - FACTORY RESET

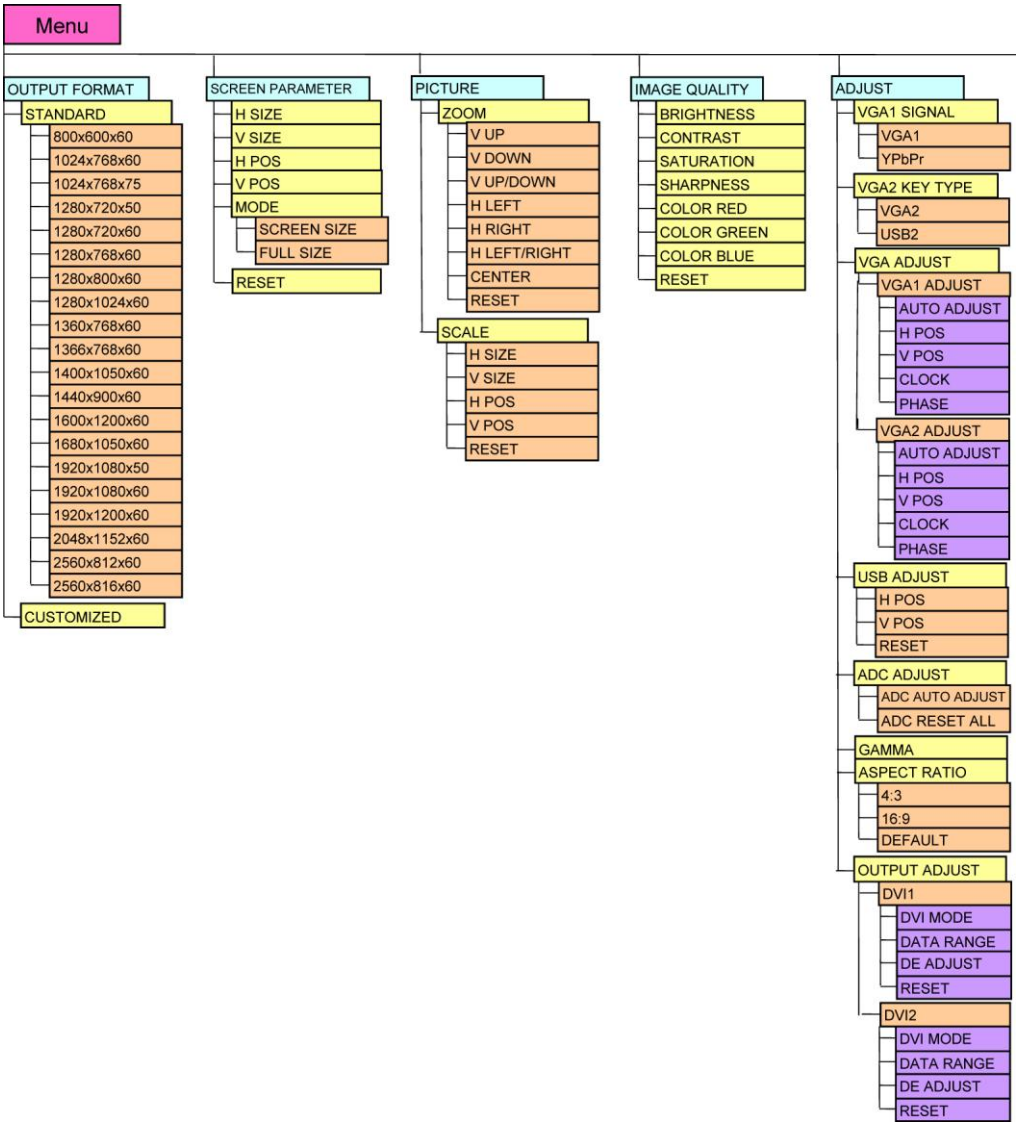
- **QUICK MENU**
  - SPECIAL EFFECTS SWITCHING
  - SAVE FUNCTION
  - LOAD FUNCTION
  - SCALE FUNCTION

4. Menu Orientation

MENU

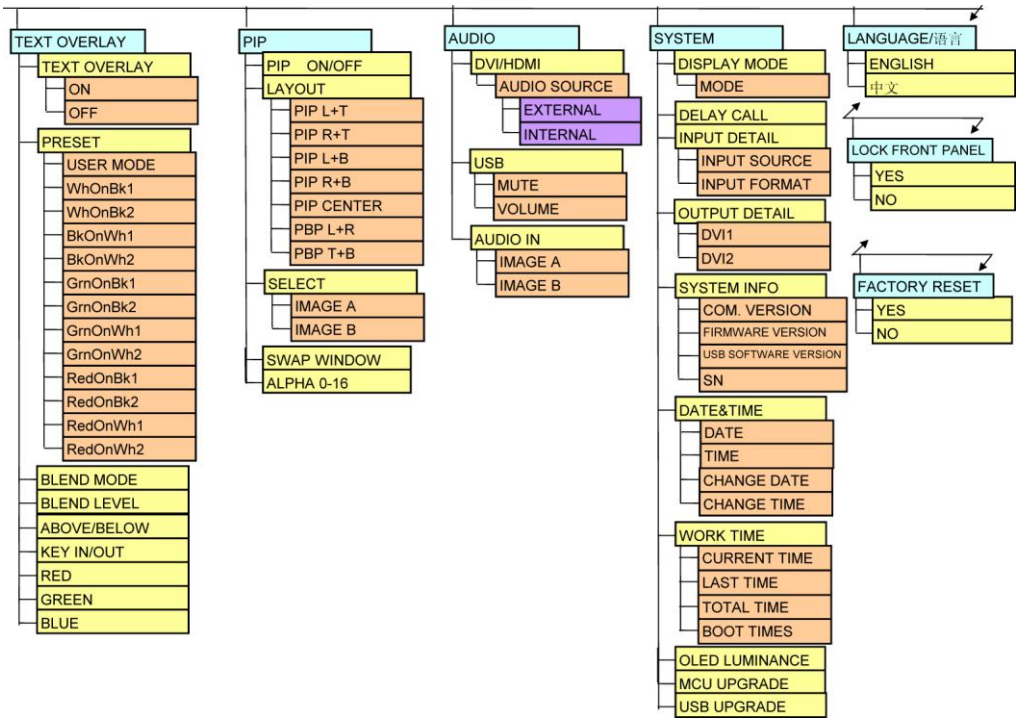
MENU

Push the **MENU** to the menu items, the menu shown as follows. Turn the knob buttons to select menu items. > before the menu means it's in selected state. Push the knob to enter corresponding setting or view the menu.



4. Menu Orientation

MENU



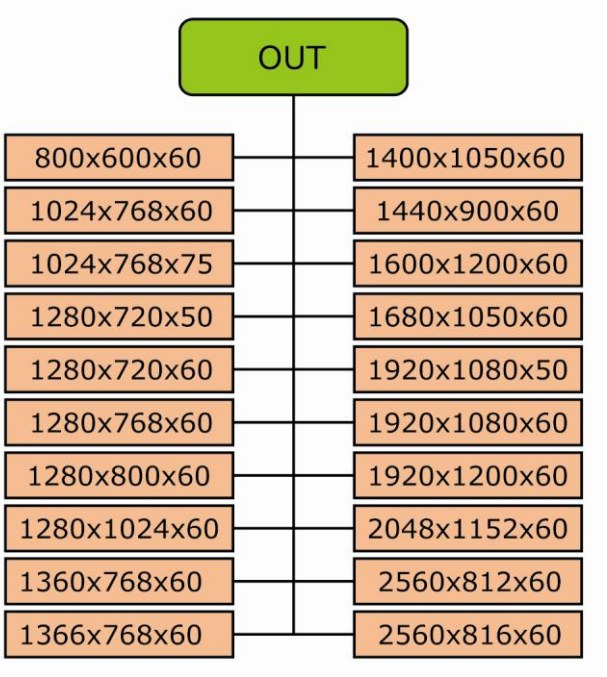
OUTPUT FORMAT

Push the [MENU] button, the OLED display menu, push the knob to select <OUTPUT FORMAT>, show menus as follows:

STANDARD: Push the knob button to select menu items, turn the knob to enter corresponding setting or view the menu. Users can choose different output formats by turning the knob, this option includes 20 common standard output resolutions, shown as follows:

4. Menu Orientation

MENU



CUSTOMIZED: The special display project or LED display application would like to require special resolution settings to meet the requirement.

Details please refer to the instructions in the manual: How to customized output resolution.

SCREEN PARAMETER

Push the [MENU] button to go into the menu items, and turn the knob to select <SCREEM PARAMETER>, show menus as follows:

H SIZE: Width setting.

V SIZE: Height setting.

H POS: Horizontal phase setting.

V POS: Vertical phase setting.

Mode: Can choose SCREEN SIZE or FULL SIZE.

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

Details please refer to the instructions in the manual: How to Set the Screen Size Setting.

4. Menu Orientation

MENU

PICTURE

Push the [MENU] button to go into the menu items, turn the knob button to select <PICTURE>, show menus as follows:

ZOOM：It can adjust the image zoom size and positions, settings including as follows:

V UP--image to up zoom.

V DOWN--image to down zoom.

V UP/DOWN--image to up and down zoom.

H LEFT--image to left zoom.

H RIGHT--image to right zoom.

H LIFT/RIGHT--image to left and right zoom.

CENTER--image from center to the edges zoom.

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

Details please refer to the instructions in the manual: How to Set up image zoom.

SCALE: It can adjust the image scale size and image position settings including as follows:

H SIZE: Width setting.

V SIZE: Height setting.

H POS: Horizontal phase setting.

V POS: Vertical phase setting.

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

NOTE

The [SCALE] button can also fulfill this setting.

Details please refer to the instructions in the manual: How to Set up the Size and Position of the Single Image.

IMAGE QUALITY

It can adjust the image quality settings including as follows:

BRIGHTNESS: It can change the image BRIGHTNESS via BRIGHTNESS settings.

CONTRAST: It can change the image CONTRAST via CONTRAST settings.

SATURATION: It can change the image SATURATION via SATURATION settings.

SHARPNESS: It can change the image SHARPNESS via SHARPNESS settings.

COLOR RED: It can change the image color Red via Red settings.

COLOR GREEN: It can change the image color Green via Green settings.

COLOR BLUE: It can change the image color Blue via Blue Settings.

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

Note

Users can set according to their actual situation, this function mainly suitable for these professional operator who knows how to set the image quality correctly. Others are not comments to do these operations. If image distorted by improper operation, it can be initialized operated to recover by factory reset.

4. Menu Orientation

MENU

ADJUST

Adjust menu including: input signal sources adjust, image quality settings, output signal adjust. Menu including as follows:

Input signal sources adjust :

VGA1 SIGNAL TYPE:

VGA1 button is VGA1 signal or YPbPr signal.

VGA2 KEY TYPE:

VGA2 button is VGA2 signal or USB2 signal.

VGA ADJUST：

Use can adjust VGA1 and VGA2 input signal, sub menu as follows:

AUTO ADJUST: Auto adjust VGA1 input signal H POS, V POS, CLOCK, PHASE, auto adjust to display in full screen image.

Note

Comments customers to use this operation in adjusting the VGA input shiftment.

H POS: Image horizontal position.

V POS: Image vertical position.

CLOCK: Input signal clock.

PHASE: Input image phase.

Note

Only comments to professional operator.

USB ADJUST：

When USB input signal image shift, please adjust image's H POS and V POS to display in full screen image.

Sub menu as follows:

H POS: Image horizontal position.

V POS: Image vertical position.

4. Menu Orientation

MENU

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

Image quality settings:

ADC ADJUST:

Mainly for the BRIGHTNESS auto adjusting.

GAMMA: Gamma setting, push it to adjust the image gamma value.

Gamma values include: LINEAR, sRGB, -1.2, -1.4, -1.6, 1.2, 1.4, 1.6.

ASPECT RATIO: Change the value to convert the aspect ratio for different wide and height ratio settings.

Normal: Original video ratio 4:3 aspect ratios, 16:9 aspect ratios.

OUTPUT ADJUST: Output adjust menu, the sub-menu as following:

DVI1, setting as following:

DVI MODE: Can set the protocol as HDMI or DVI, default is DVI output, HDMI signal output will enable when HDMI option checked.

DATE RANGE: DVI1 output range, can set as RGB (graphic mode or YCbCr (video mode), RGB output scale range is between 0-255, YCbCr range from 16 to 235.

DE ADJUST: DE adjust, the sub-menu as following:

DE ON/OFF: Can choose to open or close, when choose open, it can be adjusted to DE, as follows:

H SIZE: Width setting.

V SIZE: Height setting.

H POS: Horizontal phase setting.

V POS: Vertical phase setting.

When the signal source of the screen appear black side, can use this function to shift the black out of the screen.

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

DVI2: Including DVI MODE, DATA RANGE, DE ADJUST, and RESET,

same with DVI1.

Note

Only comments to professional operator.

TEXT OVERLAY

It can adjust the Text overlay function settings including as follows:

TEXT OVERLAY: Can select “ON” or “OFF”, OFF is the default setting.

PRESET: Can preset value of the following functions, and total 13 modes:

User: User mode.

WhOnBk1: White On Black 1.

WhOnBk2: White On Black 2.

BkOnWh1: Black On White 1.

BkOnWh2: Black On White 2.

GrnOnBk1: Green On Black 1.

GrnOnBk2: Green On Black 2.

GrnOnWh1: Green On White 1.

GrnOnWh2: Green On White 2.

RedOnBk1: Red On Black 1.

RedOnBk2: Red On Black 2.

RedOnWh1: Red On White 1.

RedOnWh2: Red On White 2.

BLEND MODE: Blend mode, with two modes, “Mode 1” and “Mode 2”.

Mode 1: Graphic content locate at the top and is non-transparent, background transparency is controlled by double-image transparency.

Mode 2: Graphic content is controlled by double-image transparency, the background is completely transparent.

BLEND LEVEL: Can set the image display transparency, regulating range between 0~16.

ABOVE/BELOW:

ABOVE: In image 2, if the pixel value is higher than the setting value, then the image is the graphic content pixel, otherwise, it is the graphic background pixel. It should combined with "AND/OR" conditions when judging.

BELOW: In image 2, if the pixel value is lower than the setting value, then the image is the graphic content pixel, otherwise, it is the graphic background pixel. It should combined with "AND/OR" conditions when judging.

KEY IN/OUT:

KEY IN: The background to delete, the text title to keep.

KEY OUT: The text title to delete, the background to keep.

RED: Red limit, cut-off point condition of ABOVE and BELOW condition in red channel, the range is 0 ~ 248.

GREEN: Green limit, cut-off point condition of ABOVE and BELOW condition in green channel, the range is 0 ~ 248.

BLUE: Blue limit, cut-off point condition of ABOVE and BELOW condition in blue channel, the range is 0 ~ 248.

Details please refer to the instructions in the manual: How to Realize the Text Overlay Setting.

PIP

Push the [MENU] button to go into the menu items, and turn the knob to select <PIP>, show menus as follows:

PIP: Choose PIP and choose ON to set PIP mode.

LAYOUT: There are 7 PIP layouts: PIP L+T, PIP R+T, PIP L+B, PIP R+B, PIP CENTER, PBP L+R, PBP T+B, user can choose any one of PIP layouts, the corresponding results are as follows.

4. Menu Orientation

MENU

PIP L+T PBP L+R PBP T+B

SELECT: Can choose to set the size or position of IMAGE A or IMAGE B individually.

SWAP WINDOW: It can set PIP to swap exchange, when choose ON, it can realize the IMAGE A and IMAGE B exchange.

ALPHA: Can set the image display transparency, regulating range between 0~16.

Details please refer to the instructions in the manual: How to Set up the PIP.

AUDIO

Push the [MENU] button to go into the menu items, and turn the knob to select <AUDIO>, show menus as follows:

DVI/HDMI: User can choose audio source, including external and internal. If choose internal, show the next level menus as follows:

MUTE: User can enable or disable the mute function.

VOLUME: Volume adjustment, the adjustment range is between 0~100.

USB: USB audio is default internal, push the button, show the next level menus as follows:

MUTE: User can enable or disable the mute function.

VOLUME: Volume adjustment, the adjustment range is between 0~100.

AUDIO IN: User can choose IMAGE A or IMAGE B.

4. Menu Orientation

MENU

SYSTEM

It can adjust the System function settings including as follows:

DISPLAY MODE:

MODE: Image mode selection, user can choose different output modes according to their requirement, such as: black, video image, freeze image, pure color and test pattern.

TEST PATTERN: Test pattern setting, rotate the knob, there are 66 kinds of modes for choose.

PURE COLOR: When the output mode is pure color image, choose corresponding red, green and blue color value in this option to meet the practical needs.

For details please refer to the instructions in the manual: How to Realize the Test Pattern Output and Settings.

DELAY CALL: Set delay the output time. When more than one equipment power on, and the processor is the end equipment in order to improve question that can't identify the input signal and phenomenon that LED screen appear messy code and flash screen, now need to delay the input time0~255S.

INPUT DETAIL: Can view information of input signal sources.

OUTPUT DETAIL: Can view information about display output signal.

SYSTEM INFO: System information, including:

COM. VERSION: Information of COM. version.

FIRMWARE VERSION: Information of FIRMWARE version.

USB SOFTWARE VERSION: Information of USB software version.

SN: Serial number of VSP 112U.

DATE&TIME: Display date and time, user can also change the date and time.

WORK TIME: Display the current time, last time, total time and boot times.

OLED LUMINANCE: Adjust OLED panel luminance, the adjustment

range is between 0~15.

MCU UPGRADE: User can upgrade the MCU version.

USB UPGRADE: User can upgrade the device by USB.

LANGUAGE

Through this option, user can choose Chinese or English according to their needs to operate the interface more quickly.

LOCK FRONT PANEL

Enter can set whether lock front panel. If open it, operating other buttons are invalid, push [SCALE] key and hold 3s to release. This function is for preventing the misoperation.

FACTORY RESET

Enter <FACTORY RESET> to reset the IP, choose YES and push the knob to confirm, then VSP 112U is reset to its factory settings. After 5 seconds, it completes factory settings and is ready for more operations.

4. Menu Orientation

MENU

QUICK MENU

Quick menu function are including: Special effects switching function, SAVE function, LOAD function and SCALE function, these functions are separate button defined.

SPECIAL EFFECTS SWITCHING

Push the [MENU] button for two times to enter into the effect switch function menu.

DEINTERLACE: Force Deinterlace function, can choose “ON” or “OFF”.

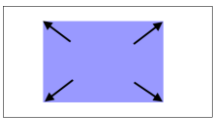
ON: Force interlace for interlaced signal without effect switching, but with effects switching for progressive signal.

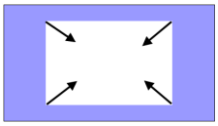
OFF: No deinterlace, with effect switching.

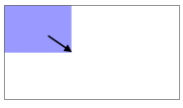
MODE: Special effects switching mode.

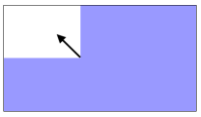
DISSOLVE: Fade in and fade out special effects switching.

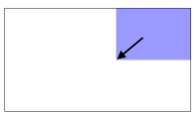
CUT: Fast switching.

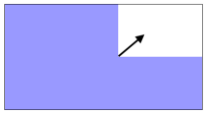
WIPE SOUARE IN: 

WIPE SOUARE OUT: 

WIPE TOP LIEFT IN: 

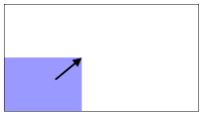
WIPE TOP LIEFT OUT: 

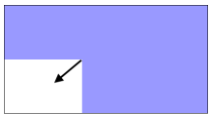
WIPE TOP RIGHT IN: 

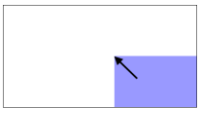
WIPE TOP RIGHT OUT: 

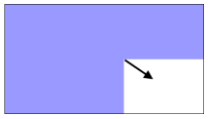
4. Menu Orientation

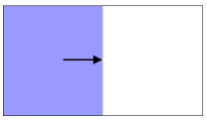
MENU

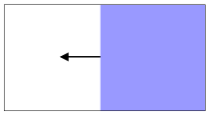
WIPE BOTTOM LEFT IN: 

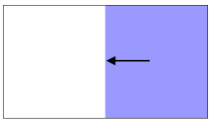
WIPE BOTTOM LEFT OUT: 

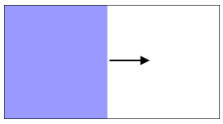
WIPE BOTTOM RIGHT IN: 

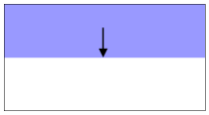
WIPE BOTTOM LEFT OUT: 

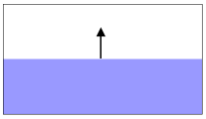
WIPE LEFT IN: 

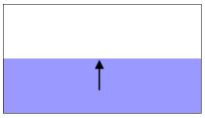
WIPE LEFT OUT: 

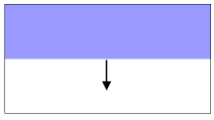
WIPE RIGHT IN: 

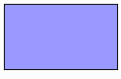
WIPE RIGHT OUT: 

WIPE TOP IN: 

WIPE TOP OUT: 

WIPE BOTTOM IN: 

WIPE BOTTOM OUT: 

Note:  Means the image emerging.

 Means the image disappearing.

Arrows represents the direction of the image move, that is, the image that arrow point, is compressed or stretched to the direction that arrow indicates,

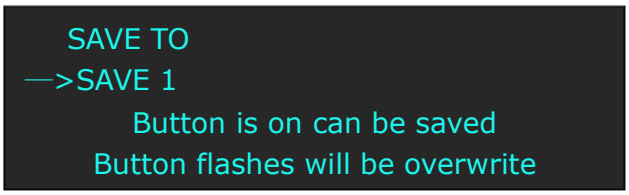
until disappear or full screen.

FADE TIME: Switch time setting. Turn the knob to choose the time and push the knob to confirm. The switching time ranges from 0 to1S.

ALPHA: It can set the image transparency, the regulating range is between 0~16.

SAVE FUNCTION

Push the [SAVE] button, the button led light is on, and enter into the save function menu. OLED module shows as follows:

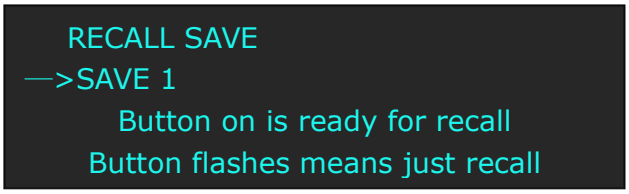


According to the OLED module information for save operation.

Details please refer to the instructions in the manual: How to Save the Parameter.

LOAD FUNCTION

Push the [LOAD] button, the button led light is on, and enter into the load function menu. OLED module shows as follows:



According to the OLED module information for LOAD operation.

Details please refer to the instructions in the manual: How to Load the Saved Parameter.

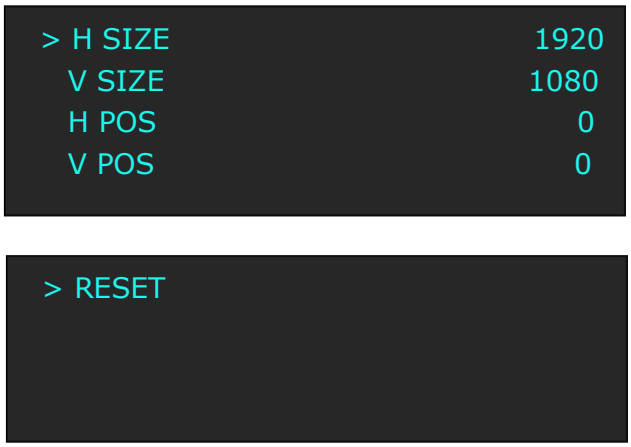
SCALE FUNCTION

Push the [SCALE] button, the button led light is on, and enter the SCALE

4. Menu Orientation

MENU

function menu. OLED display shows as follows:



H SIZE: Width setting.

V SIZE: Height setting.

H POS: Horizontal phase setting.

V POS: Vertical phase setting.

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

Details please refer to the instructions in the manual: How to Set up the Size and Position of the Single Image.

5. Communication Software Guideline

In This Chapter

This chapter provides detailed information about the control communication software. The following topics are discussed:

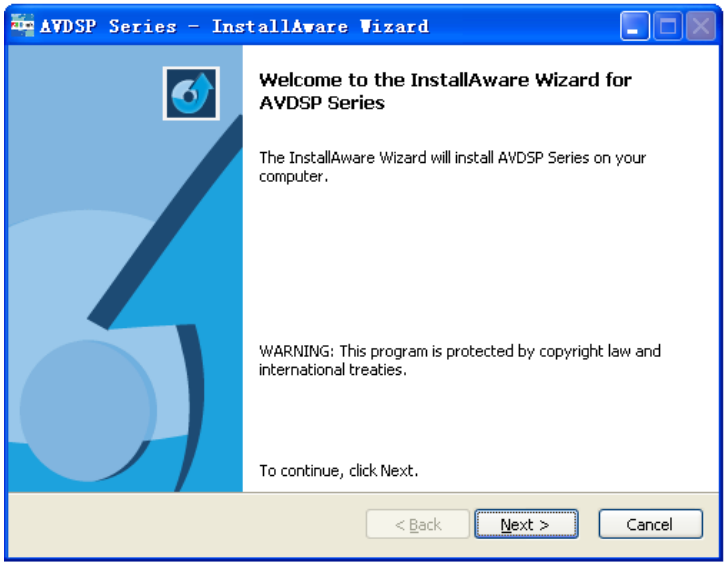
- Software Installation
- Software Operation
- How to Connect Windows Control Program by RS232 Port
- How to Connect Windows Control Program by USB Port

Software Installation

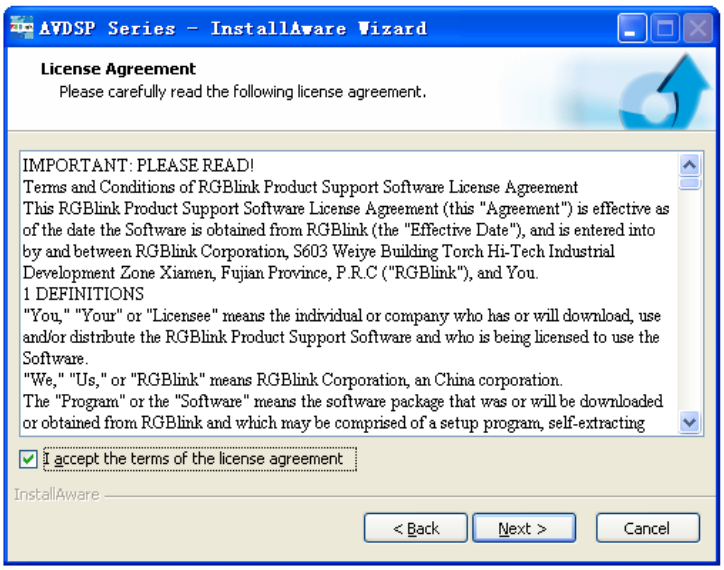
AVDSP video processor is very easy to be configured with user friendly communication software, support drag and drop operation for edit and display. Also it can be customized with schedule function.

Double click 

to install, English version default for use, click “select” to next dialog:

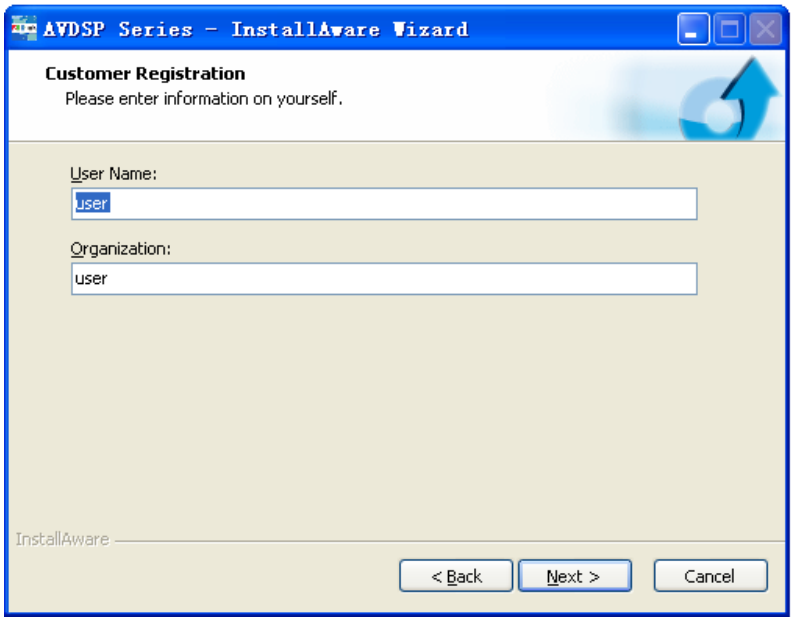


And in next dialog is the user agreement of the software, click Agree to go on:

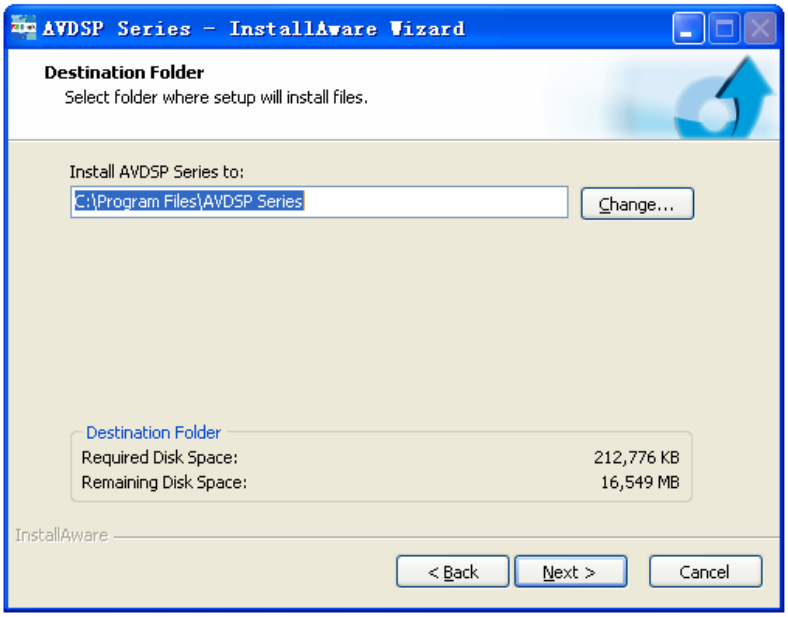


5. Communication Software Guideline

Software Installation



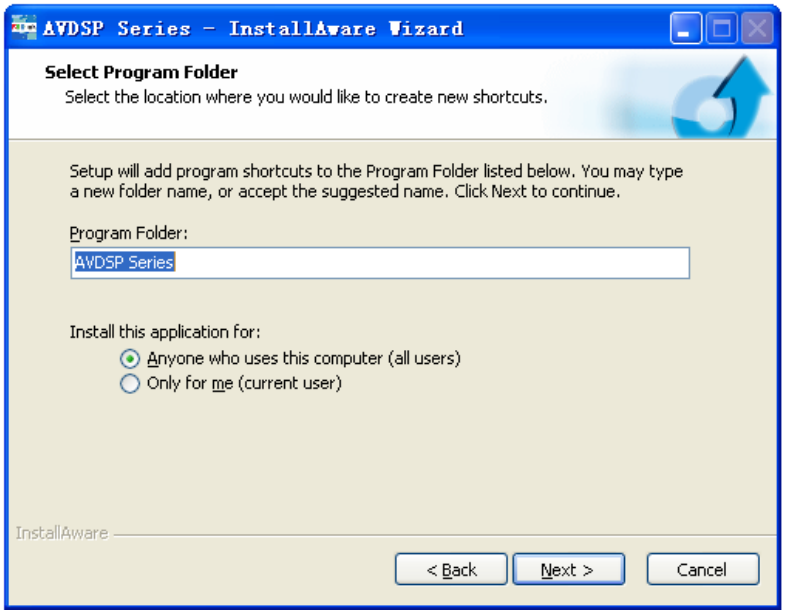
User can select “Change” to choose the VSP 112U install software:



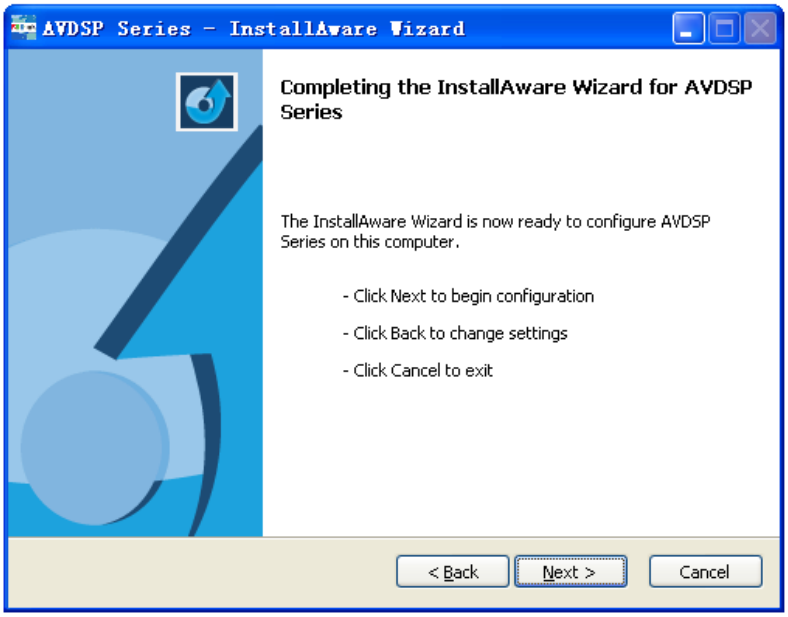
5. Communication Software Guideline

Software Installation

Click “Next” to go on:



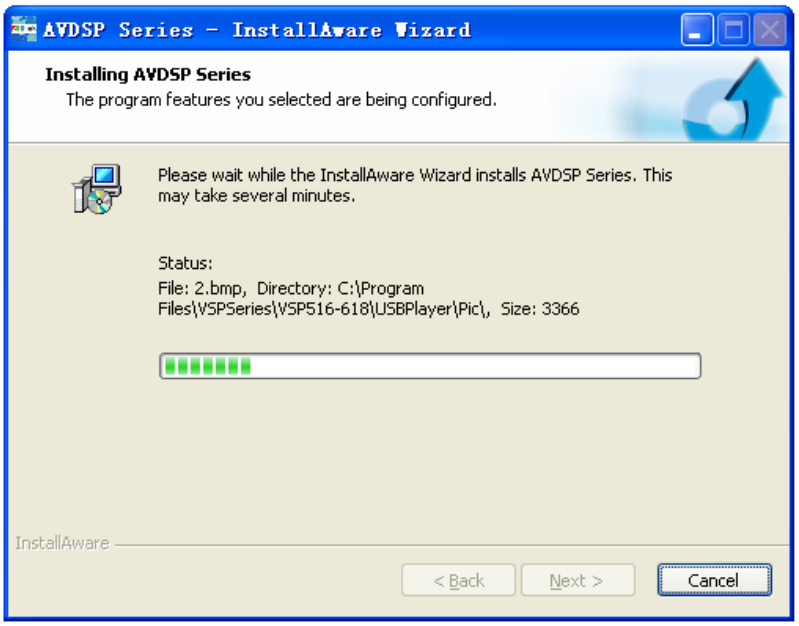
Click “Next” to go on:



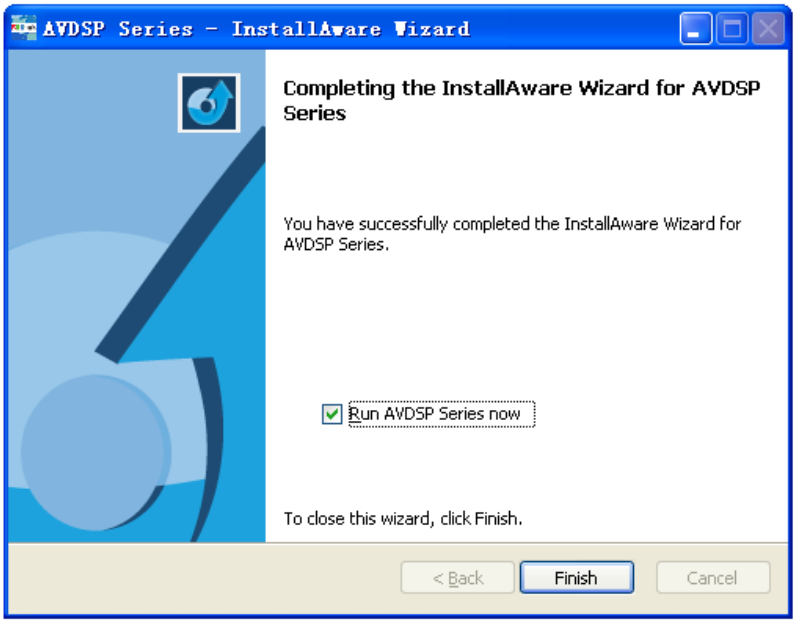
5. Communication Software Guideline

Software Installation

Click “Next” to go on:



Click “Finish” and ready to run VSP 112U console:



Software Operation

Install communication which comes with the package of VSP 112U device.

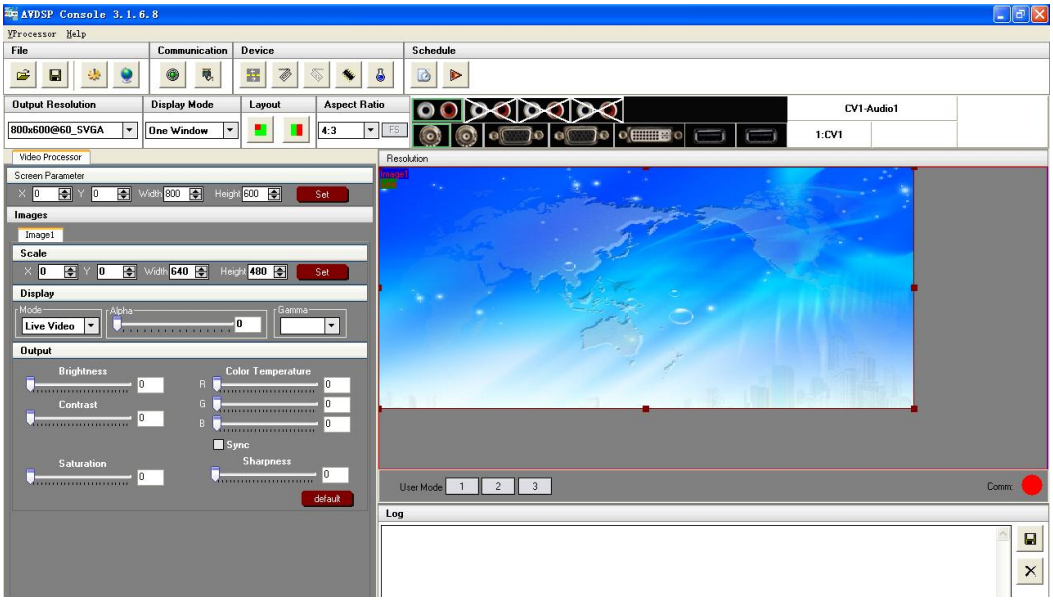
Double click 

icon from home screen to install the software.

Double click 

icon and choose 

to run the software, and VSP 112U communication software interface as shown:



Connection

Besides the power cord, the product default equip with the RS-232 line, DB9F line, and RJ11 (6 B4C) line to connect VSP 112U to the windows control program.

For more detailed information, please refer to: "**How to Connect Windows Control Program by RS232 Interface**".

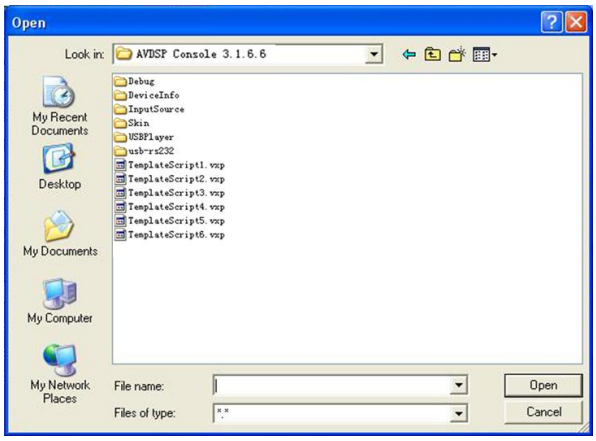
Use

File Toolbar

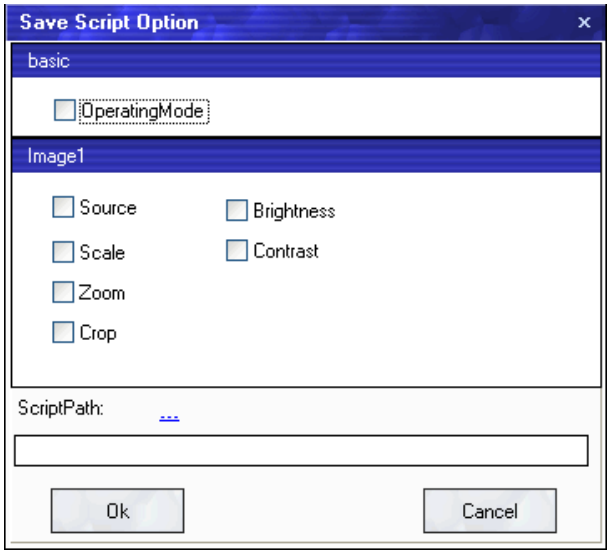
5. Communication Software Guideline

Software Operation

 : Open script. User can open saved script and alter its parameters.



 : Save script. Save current user parameters as script to the prescribed path.

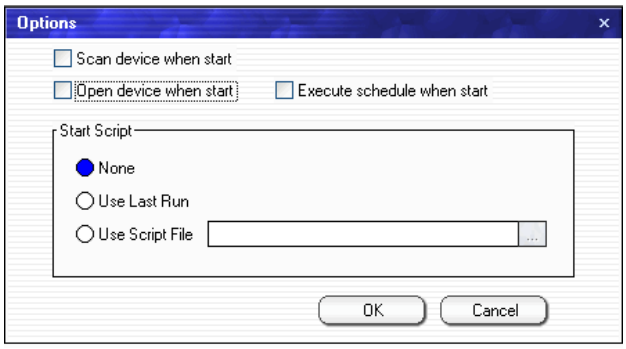


 : Option: User can choose open device when start and using script saved before or execute schedule edited before when start.

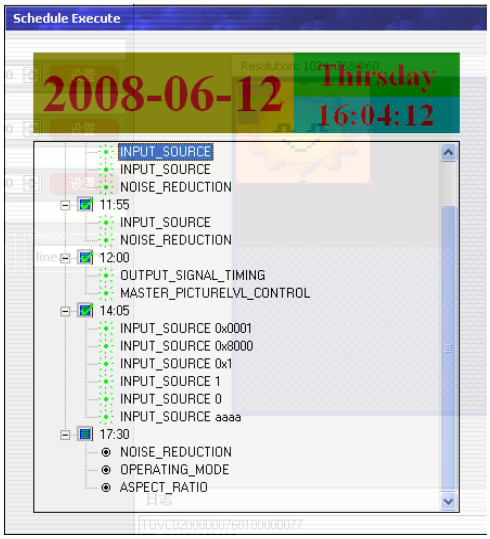
If user choose open device when start, user can use last run, use script file or none when user start. User can click  to choose which script user want to open.

5. Communication Software Guideline

Software Operation



If user choose “execute schedule when start”, and when run the software again, it will show the following dialogue.

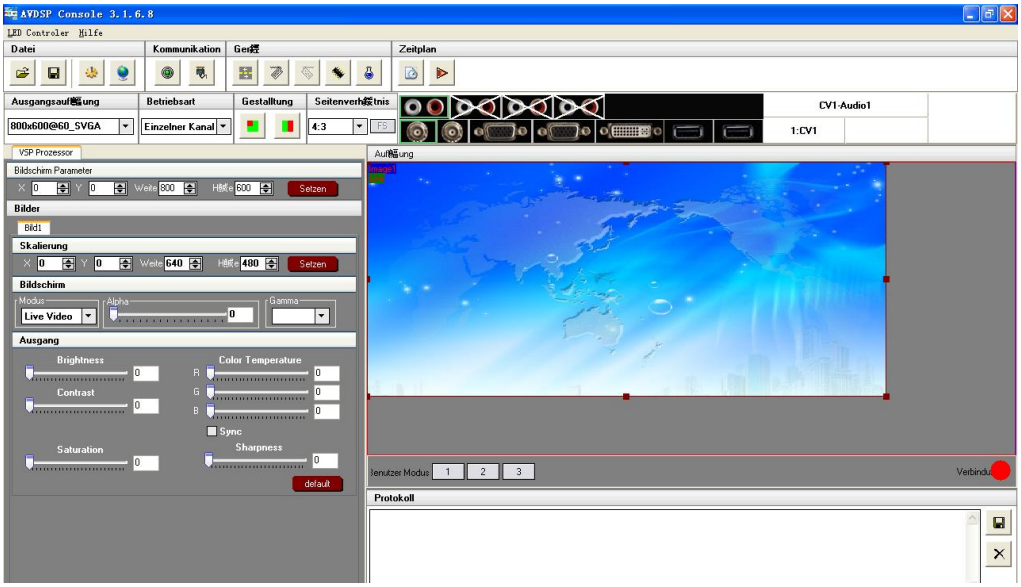


 : Language, the software supports Chinese, English and German version.

The picture following is the German dialogue.

5. Communication Software Guideline

Software Operation



Communication Toolbar

 : Open the COM.

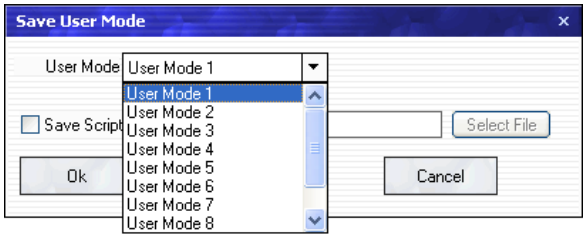
 : Close the COM.

 : Set the COM.

Device Toolbar

 : Synchronization.

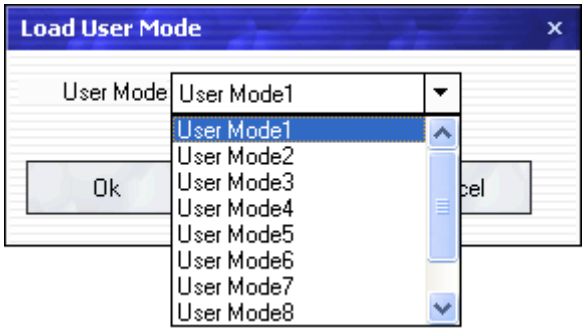
 : Save to flash.



 : Load form Flash.

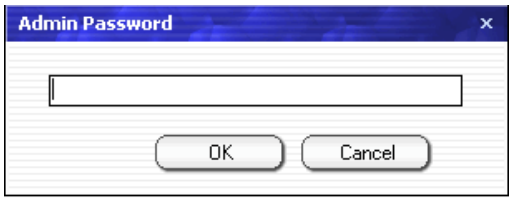
5. Communication Software Guideline

Software Operation



 : Factory setup.

 : Advance.

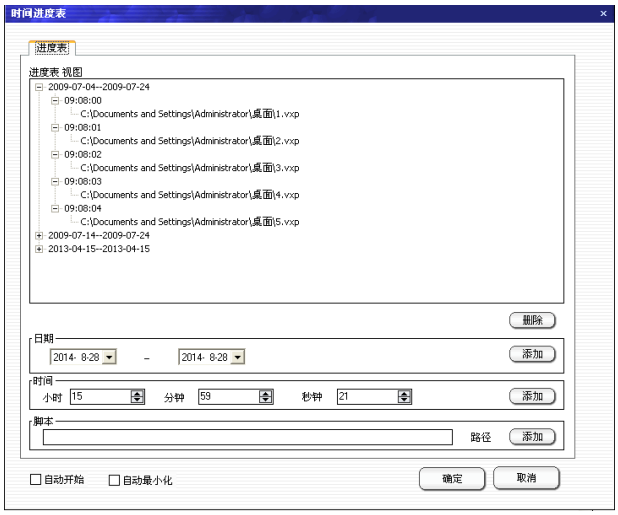


Note

Advance is only done by engineer. Please connect us for password.

Schedule Toolbar

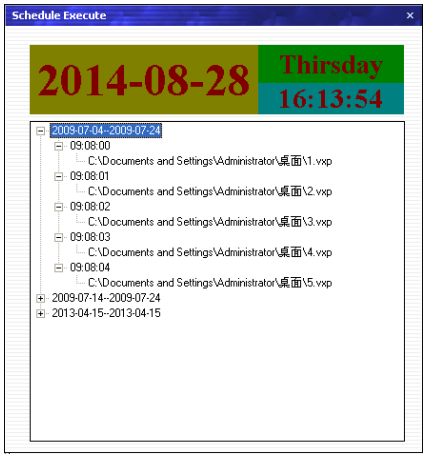
 : Customize schedule.



 : Execute schedule. Execute tasks according to schedule.

5. Communication Software Guideline

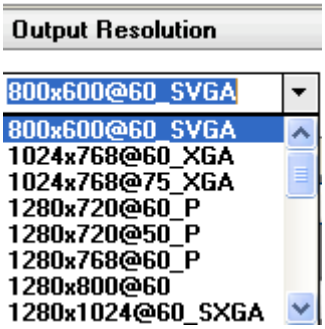
Software Operation



Output Resolution Toolbar

User can choose different output resolution by selecting from pull down list.

VSP 112U has 20 output resolutions for users selection.

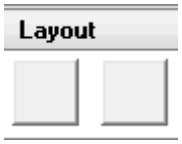


Display Mode Toolbar

Choose to work in one window or two window.

Layout Toolbar

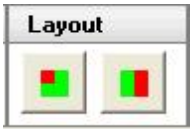
In one window mode, the dialog is in grey and it is in limited use.



In two window mode, user can set the device to work in PIP or PBP mode directly with quick preset layout button as following.

5. Communication Software Guideline

Software Operation

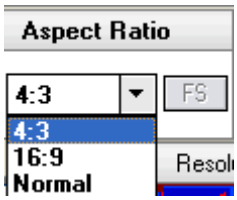


Note

Same as MENU → PIP → LAYOUT.

Aspect Ratio Toolbar

Users can select 4:3, 16:9 or Normal in the pull-down options.



Signal Input Toolbar

The white area displays the name of input interface when the mouse is over the interface picture on the left. The green pane means current selected signal.

When user selects a dual channel mode, select any channel image, click on the toolbar interface the ICONS for the channel selection input interface, green toolbar means the signal is chosen the current interface for channel 1 input interface, the default last single channel chosen interface for channel 2 input interface, the currently selected channel will be shown on the right side of the source.

Screen Parameter Toolbar

User can set size and position of the screen, mainly applies to LED display users. After setting screen parameter, it will show the picture on

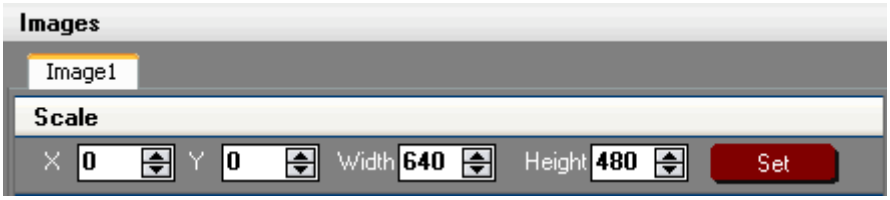
corresponding screen when choose PIP or PBP mode.

Note

Same as MENU → SCREEN PARAMETER

Image Toolbar

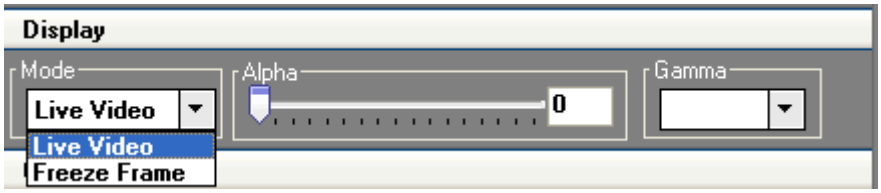
User can scale the images. Image 2 can't choose if in one window mode.



Note

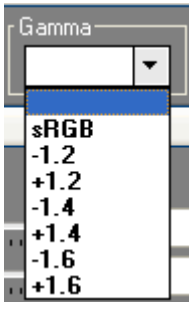
Same as MENU → PICTURE → SCALE, or [SCALE] button.

Display Toolbar



When it is in Live Video, the video plays, when it is in Freeze Frame, the video stop playing.

Setting Gamma is generally not recommended, as LED display itself has Gamma function. For further information, users can contact with our customer service team.



5. Communication Software Guideline

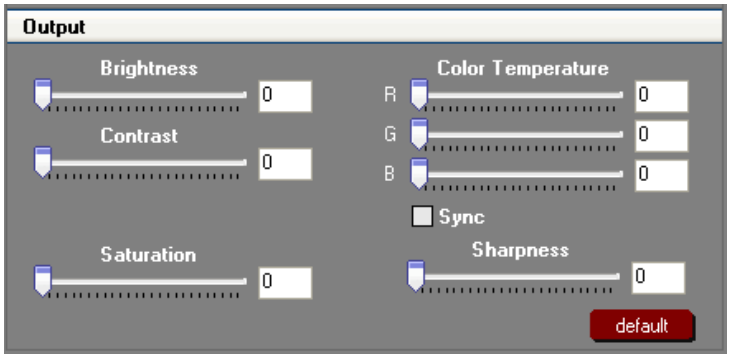
Software Operation

Note

Same as MENU → ADJUST → GAMMA

Output Toolbar

User can adjust the brightness, contrast, saturation, color temperature and sharpness.

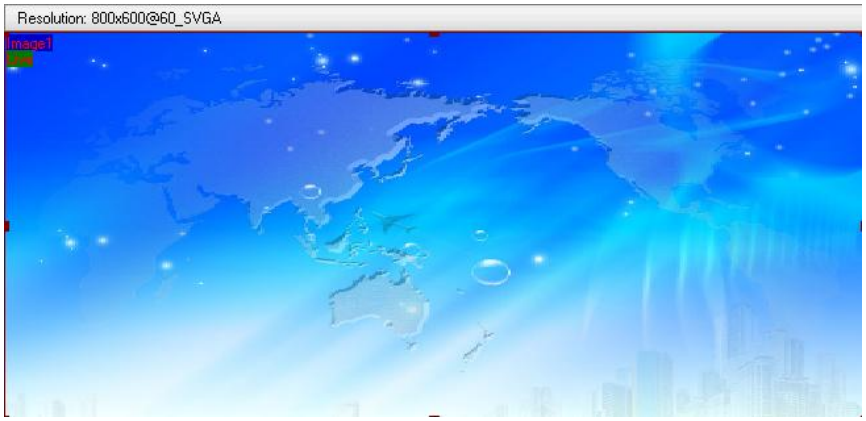


Note

Same as MENU → IMAGE QUALITY.

Images Display Toolbar

Show the position, size and resolution of the current image, the image will change if user adjust the parameters in images toolbar.



5. Communication Software Guideline

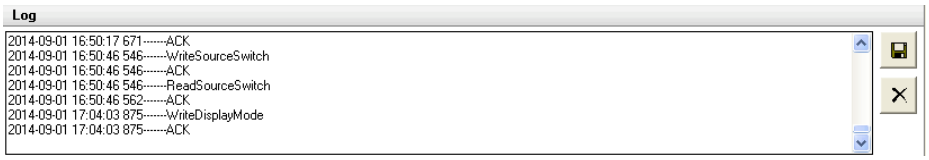
Software Operation

User Mode Toolbar

Users can load user mode1, mode 2 or mode 3.

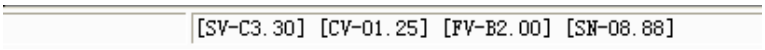
Log Toolbar

User can save or delete the log files.

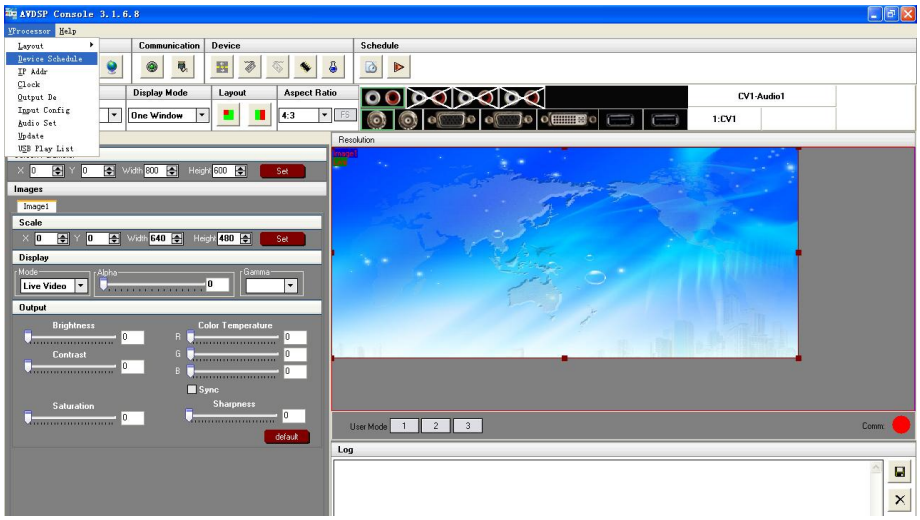


Information Toolbar

It is the VSP 112U software version, core board version, firmware version and the serial number in bottom of the software interface.



[Video Processor] Options

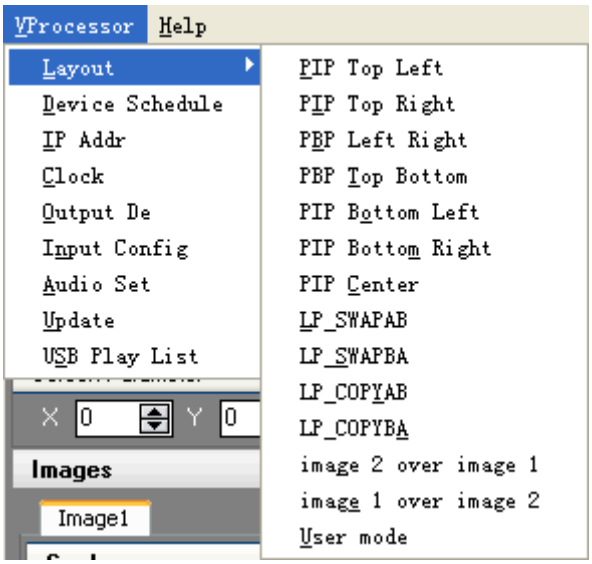


Layout:

Through the layout of the user can set the double-picture modes.

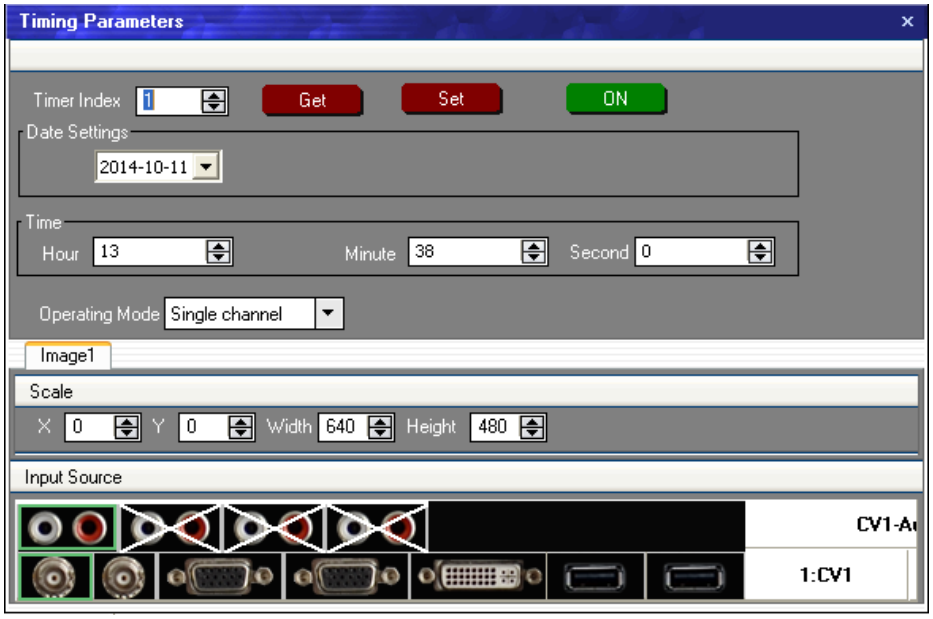
5. Communication Software Guideline

Software Operation



Device Schedule:

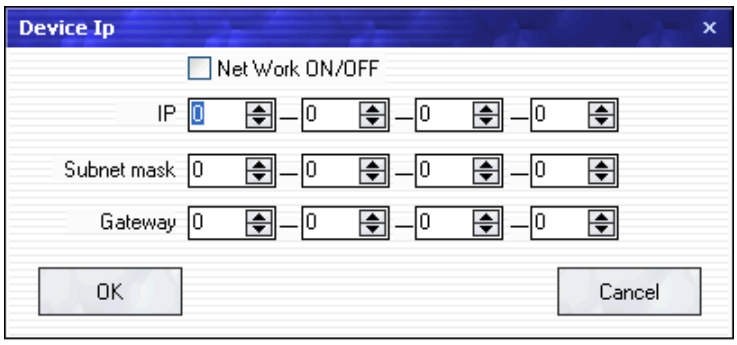
Users can set up VSP 112U to play the appointed videos automatically in appointed time and support operation of one window, two window and ratio. Users can setup 10 timing operations in the schedule.



IP Address:

Users can set equipment IP, subnet mask and gateway, usually used under the condition of one computer control or remote control several computers. It takes effect immediately after users change IP through serial port, and when users change IP through network, it takes effect after reopen the

software.

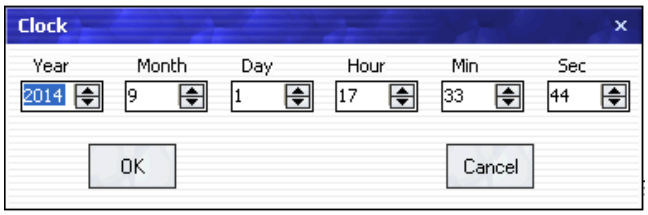


Note

VSP 112U can not support this function.

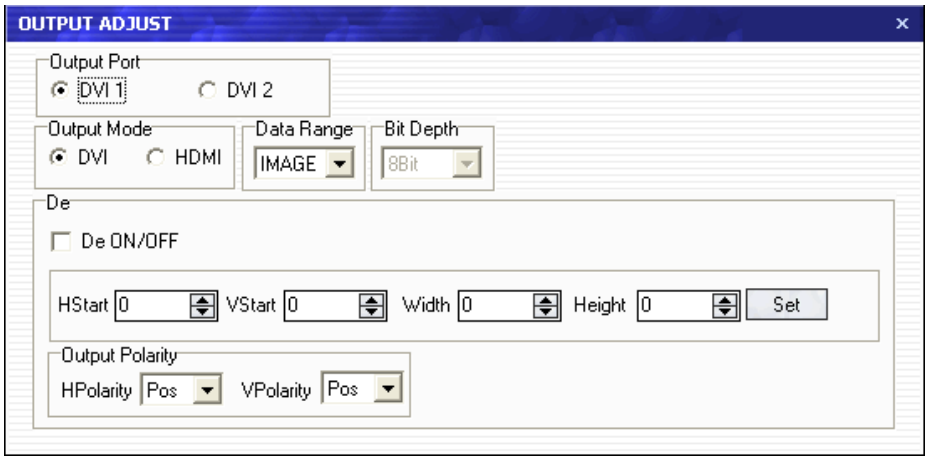
Clock:

Users can set or adjust the computer time through" clock".



Output Adjust:

User can adjust DVI1 or DVI2 output port.

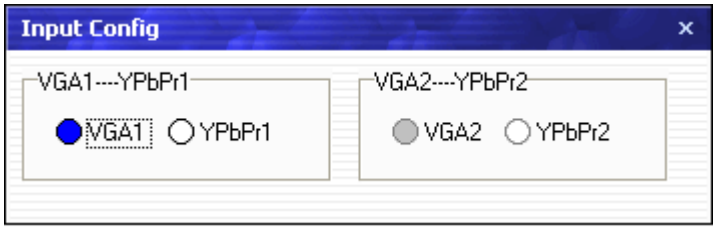


Input Config:

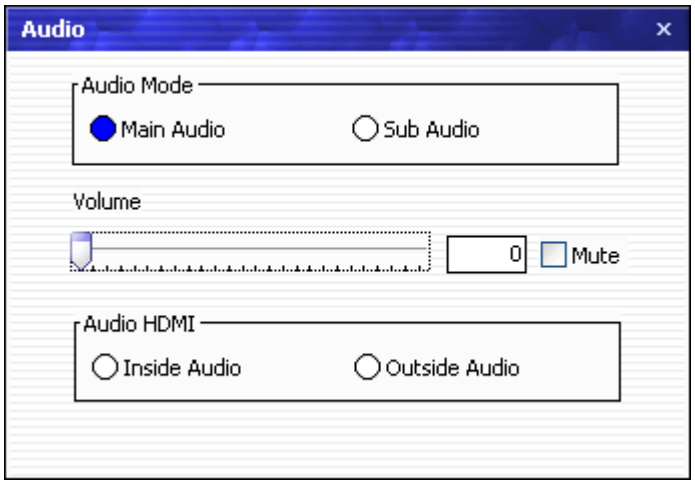
Choose VGA1 or VGA2 button input signals.

5. Communication Software Guideline

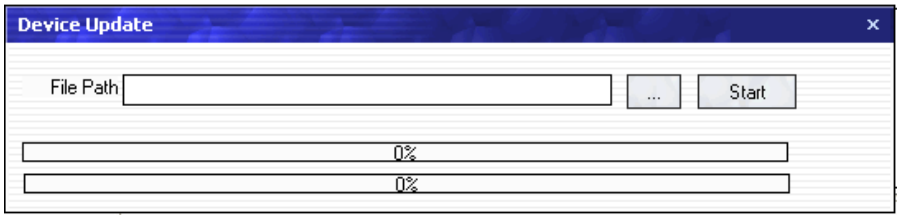
Software Operation



Audio set：

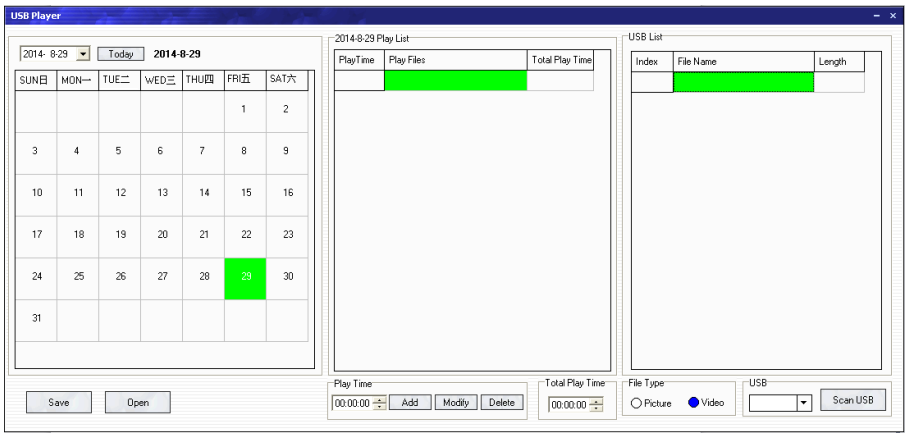


Update：



USB Play List：

User can set the USB play list through this function, for more setting details, please refer to “How to Set up the USB Play List”.



5. Communication Software Guideline

Software Operation

[Help] Options

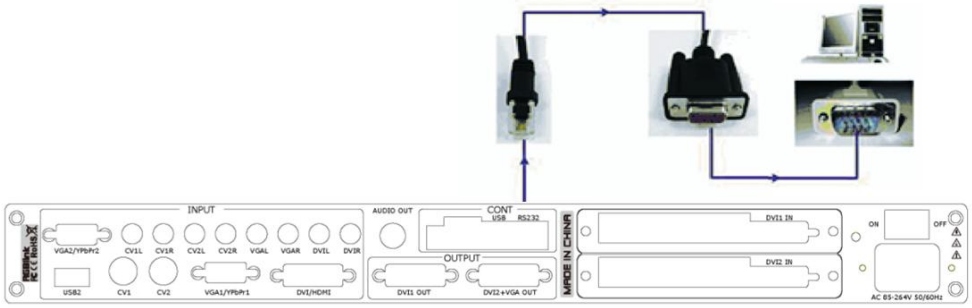
Version History: Show the content of software update.

About: The information of the software version and the company.

How to Connect Windows Control Program by RS232 Port

Firstly, install the control software in your PC.

Take out the RS 232 cable as following (RS-232, with 9-pin on one end, RJ 11 on the other side). Connect one side of the RJ11 download line to the RS232 on the video processor VSP 112U, and the other side to be connected to the serial port on the PC.

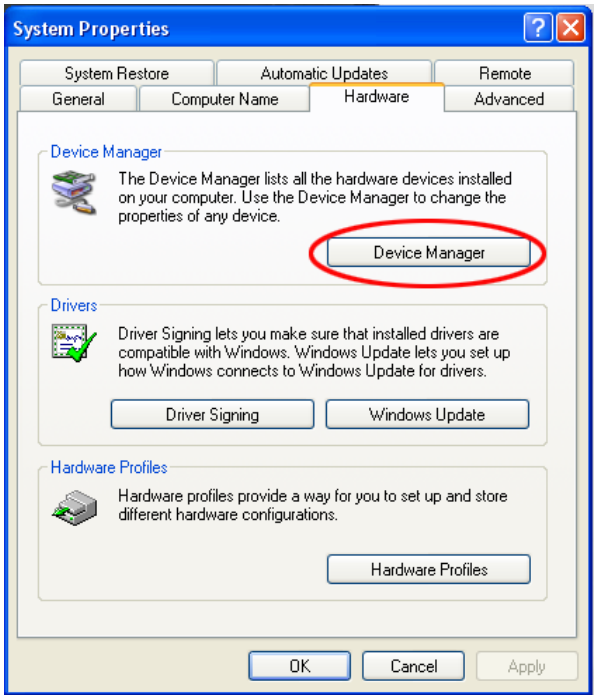


There is no any serial port on your PC, you will need another Serial to USB adapter. Connect one end of the RJ11 download line to the RS232 on the video processor. Connect the end of USB-side to the PC. Ensure the cable connection is good. Turn on the Video Processor VSP 112U.

Right click the [My Computer] on the home screen of control PC. Enter [Attribute], Find [Hardware] Option, as following:

5. Communication Software Guideline

How to Connect Windows Control Program by RS232 Port



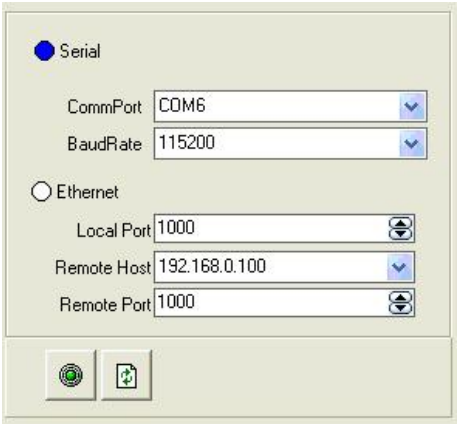
Click [Device Manager] “+” on the left, check the COM number, as following,

COM1 is offered.

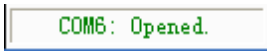
Remember the COM you are using and then run the control software, find [Communication] option. In default, first time user have to click  button, as following:

5. Communication Software Guideline

How to Connect Windows Control Program by RS232 Port



Check and tap [Serial], Serial Port , for example, is **COM6** which is checked from device manager. Set VSP 112U Boud Rate to be: 115200, Click [Confirm] after setting.

Click  [open serial], check if [COM] icon is on the bottom right corner, when there is the prompt green  showing on the software, it means the communication is ok , and you can use the software to control the device now.

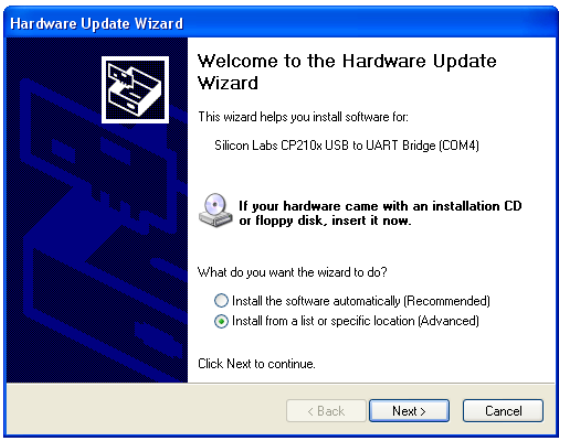
Note

If power off during communication, should close the port  , by first, and plug in out of the USB  and do communication.

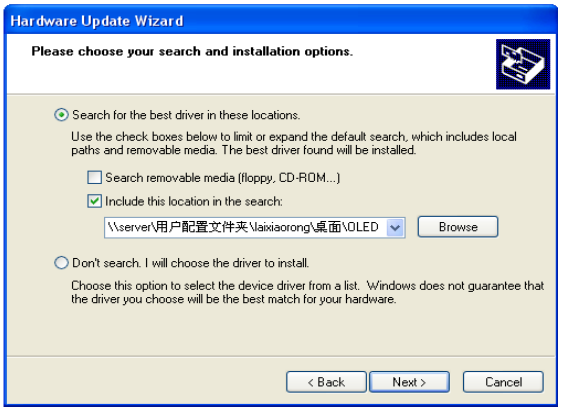
How to Connect Windows Control Program by USB Port

Install the driver.

Connect the USB cable to the PC and the video processor. Turn on the VSP 112U, for the first time to use USB, the PC will remind finding the new hardware and ask to install the driver for this new driver:



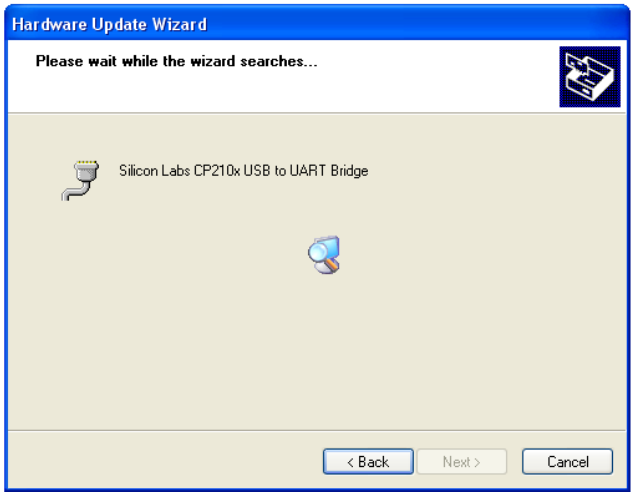
Install from the list or specified location, click “NEXT”:



Press “browser” to find the driver, and click “NEXT”:

5. Communication Software Guideline

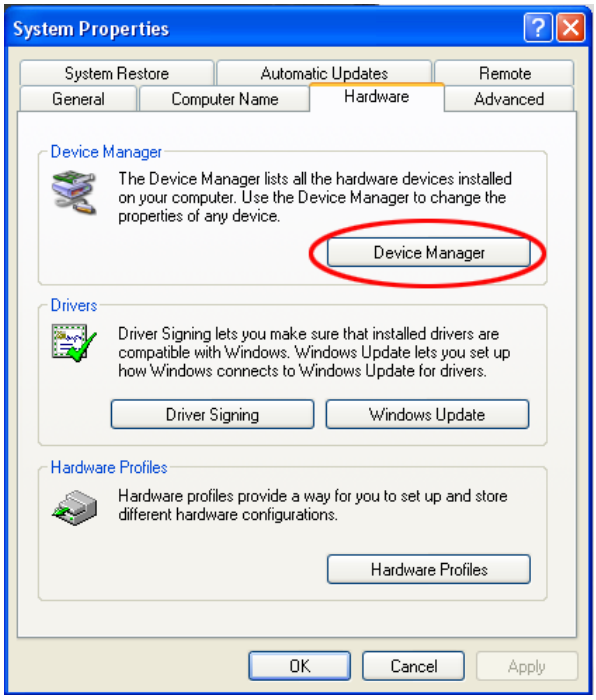
How to Connect Windows Control Program by USB Port

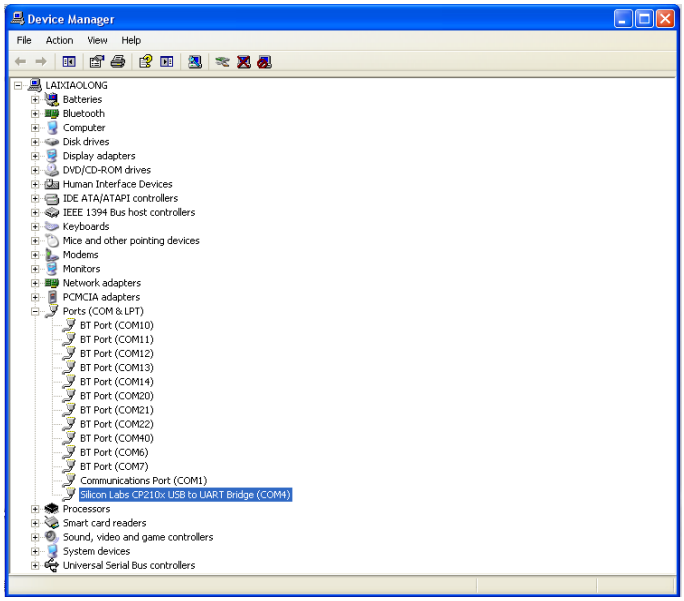


When the installation finish, can go to check the installed COM port inside the device management, as following image shows:

5. Communication Software Guideline

How to Connect Windows Control Program by USB Port



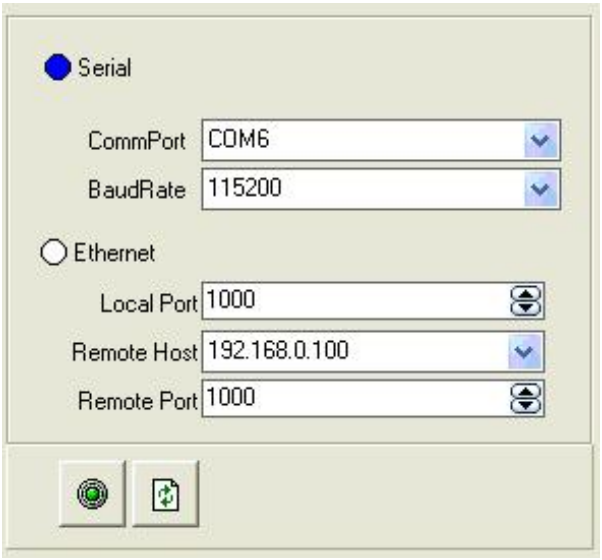


Install the console software, and run after install, shows the interface of the console as following:

Select the COM as installed just now, and set the VSP 112U Boud Rate to be: 115200.

5. Communication Software Guideline

How to Connect Windows Control Program by USB Port



Click  to start communication, when there is green point in the right down corner showing on the software, it means the communication is ok, and user can use the software to control the device now, the software operation is the same as VSP 112U.

6. System Setup and Operations

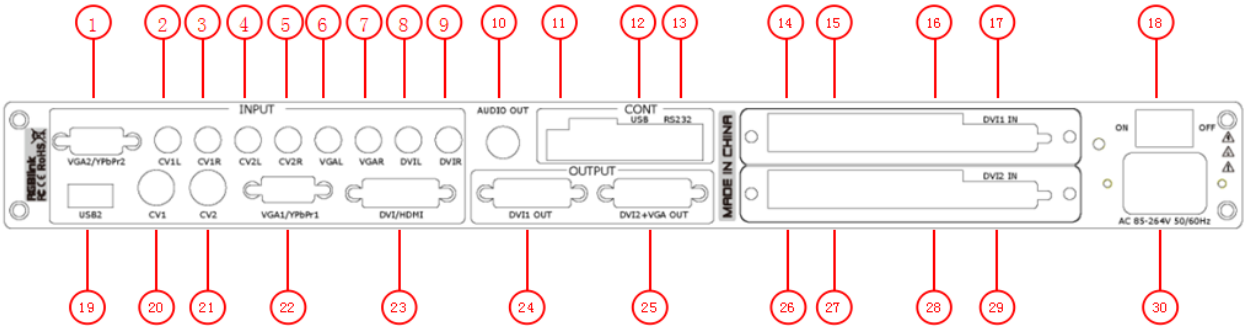
In This Chapter

This chapter provides comprehensive instructions for system setup and operations. The following topics are discussed:

- Interface and Input Signal Option
- User Guideline
- How to Set up the USB Playlist
- How to Realize Single Image Switching
- How to Set up the PIP
- How to Do Customized Output Resolution
- How to Set up the Size and Position of Single Image
- How to Realize the Screen Size Setting
- How to Set up Image Zoom
- How to Realize the Text Overlay Setting
- How to Realize Test Pattern Output and Settings
- How to Save the Parameter
- How to Load the Saved Parameter

Interface and Input Signal Option

The figure below illustrates the professional interface and control signals of VSP 112U back panel.



NO	INTERFACE	NO	INTERFACE
2~9	Audio Input RCA port	18	Switch
10	Audio Output BNC port	19	USB input port
11	Dial Switch	20.21	CVBS Input BNC port
12	USB Interface of Device	1.22	VGA Input DB15 port
13	RS232 Interface	23	DVI Input DVI-I
14.15.26.27	10/100M Interface RJ45	24	DVI Output DVI-I
16.28	USB Interface of Sending Card	25	DVI+VGA DVI-I Output
17.29	DVI Input Port of Sending Card	30	Power IEC-3 port

24. DVI1 is default the main image output , use for connecting the sending card of LED display, VSP 168S supports resolution format as following: 800x600x60Hz, 1024x768x60Hz, 1024x768x75Hz, 1280x720x60Hz, 1280x720x50Hz, 1280x768x60Hz, 1280x800x60Hz, 1280x1024x60Hz, 1360x768x60Hz, 1366x768x60Hz, 1400x1050x60Hz, 1440x900x60Hz, 1600x1200x60Hz,1680x1050x60Hz,1920x1080x60Hz,1920x1080x50Hz, 1920x1200x60Hz, 2048x1152x60Hz, 2560x812x60Hz, 2560x816x60Hz.

25. DVI2 + VGA output, output DVI video signal or VGA video signal,

connect the display or other device with DVI or VGA interface, and output the signal by DVI-I interface. Support resolution format as following: 800x600x60Hz,1024x768x60Hz,1024x768x75Hz,1280x720x60Hz, 1280x720x50Hz, 1280x768x60Hz, 1280x800x60Hz, 1280x1024x60Hz, 1360x768x60Hz, 1366x768x60Hz, 1400x1050x60Hz, 1440x900x60Hz, 1600x1200x60Hz,1680x1050x60Hz,1920x1080x60Hz,1920x1080x50Hz, 1920x1200x60Hz, 2048x1152x60Hz, 2560x812x60Hz, 2560x816x60Hz.

1. 22. VGA（DB15 Port）Can support HD player, computer, video signal. Through the DB15 interface input signal.

19. USB（USB Port）Can access the USB device or mobile hard disk with USB storage function. Mainly used to store video program package.

20. 21. CVBS (BNC Port) Can receive standard video signal from players, cameras etc. Input supported resolution 480i and 576i via BNC. Supported standards include: PAL, NTSC and SECAM.

23. DVI（DVI-I Port）Computer graphics interface may receive the DVI output interface can also through the DVI turn HDMI cable to connect the computer graphics HDMI output or DVD HDMI output.

18. Power：Power has been already supplied for video processor.

30. AEC Port：AC 85-264V 3.8A 50/60Hz IEC-3 Power Interface.

User Guideline

Inputs cable, outputs cable, control cable, power cable were connected to interface finish turn on the power switch, user guideline :

The fist step set up OLED display language.

The second step set up output format.

The third step set up LED screen height size.

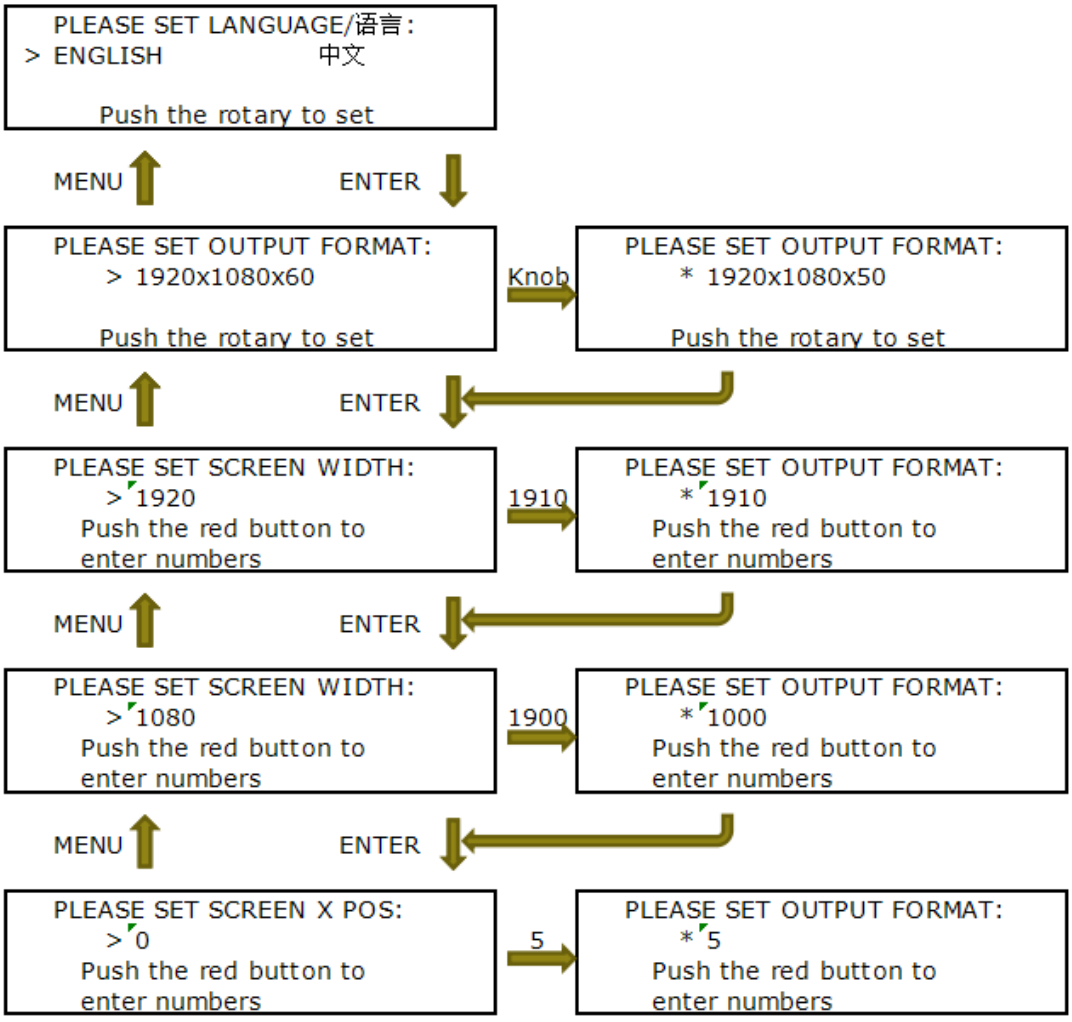
The fourth step set up LED screen width size.

The fifth step set up LED screen horizontal size.

The sixth step set up LED screen Vertical size.

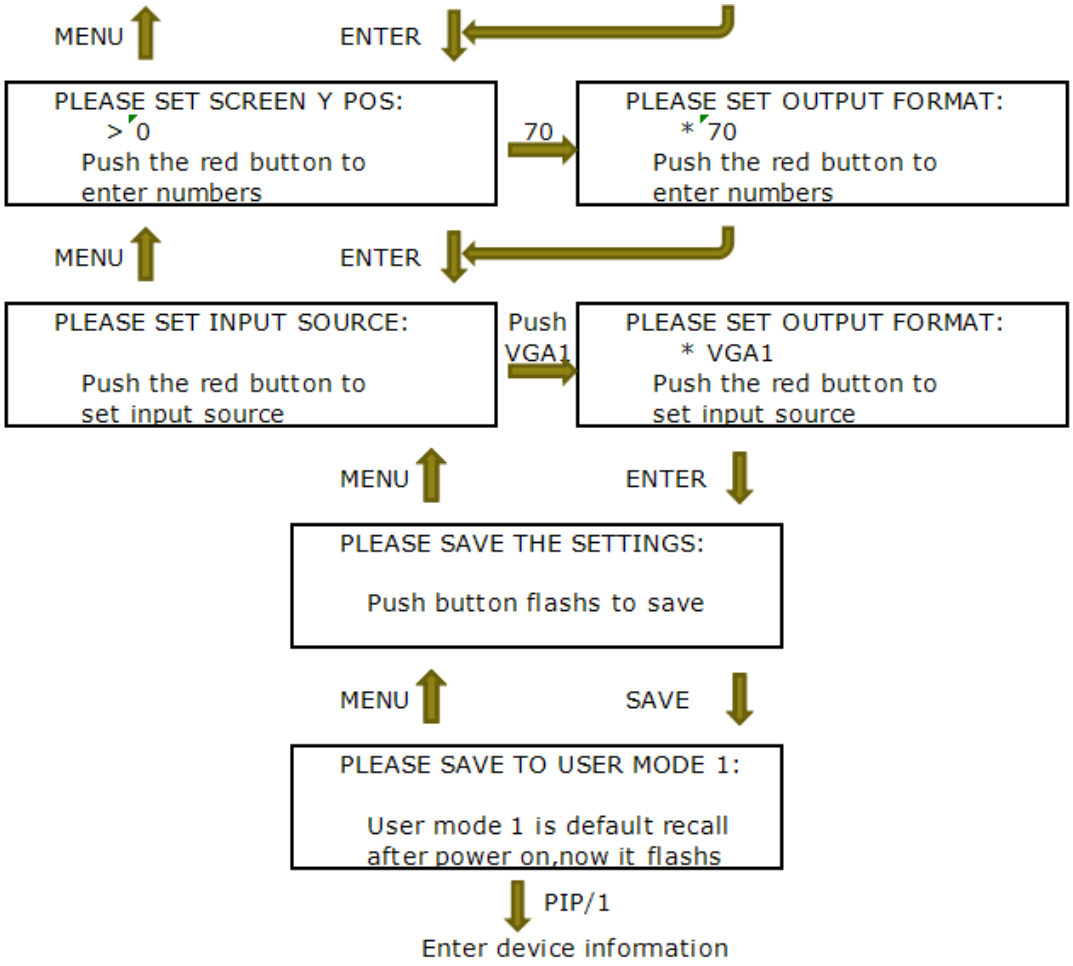
The seventh step set up input source.

The eighth step up save.



6. System Setup and Operation

User Guideline

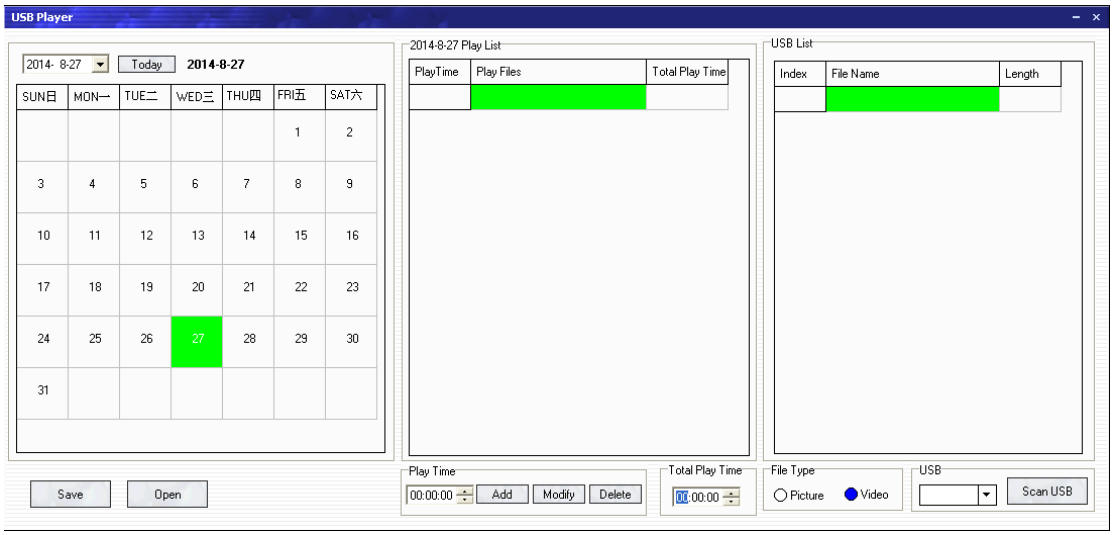


How to Set up the USB Playlist

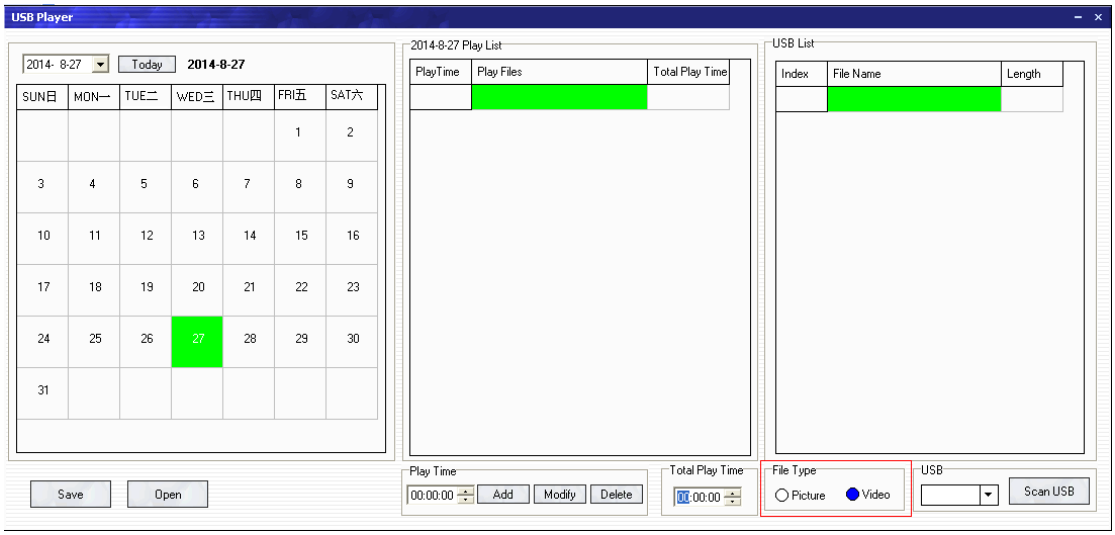
1. Copy the video files to the USB, and then insert the USB to the computer.

2. Double click the software ”AVDSP Console 3.1.6.8”.

3. Click “VProcessor” menu, and choose “USB Play List” option, pop up the USB Player interface shown as follows:



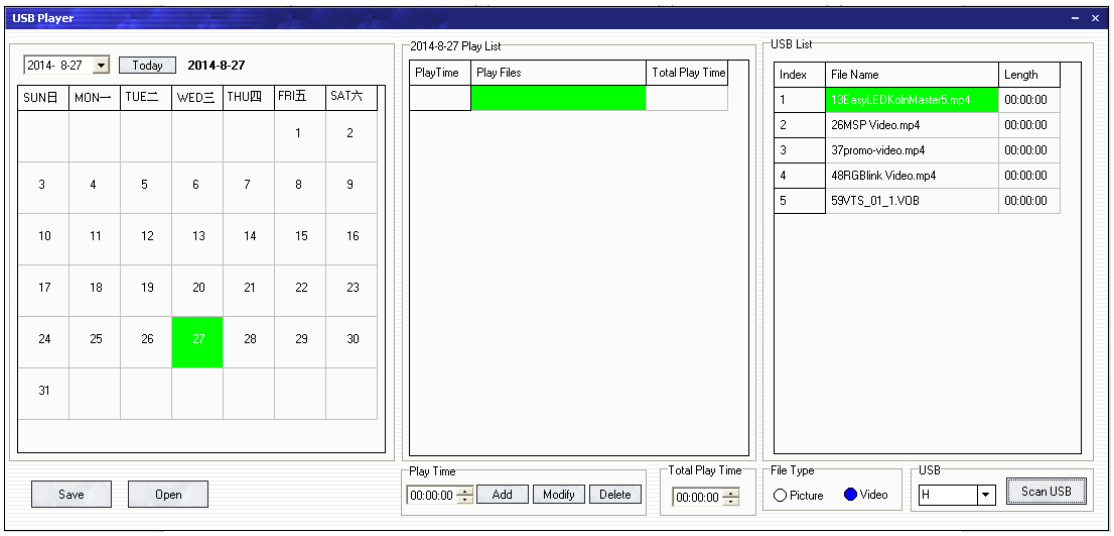
4. Choose the file type as “Picture” or “Video”, as shown in the red box:



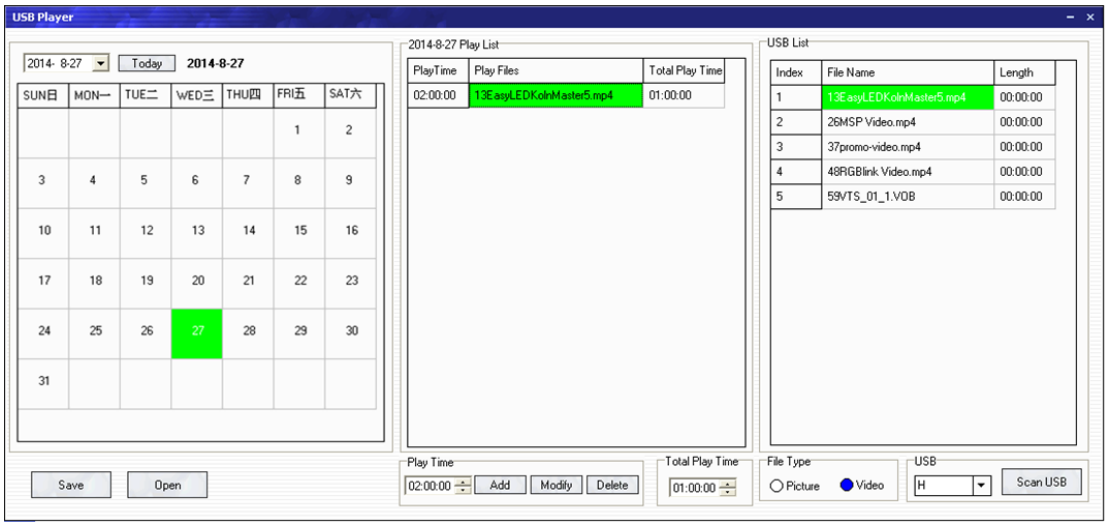
5. Click “Scan USB” to scan the files in USB, USB Player will rename the files, that is add serial number.

6. System Setup and Operation

How to Set up the USB Playlist



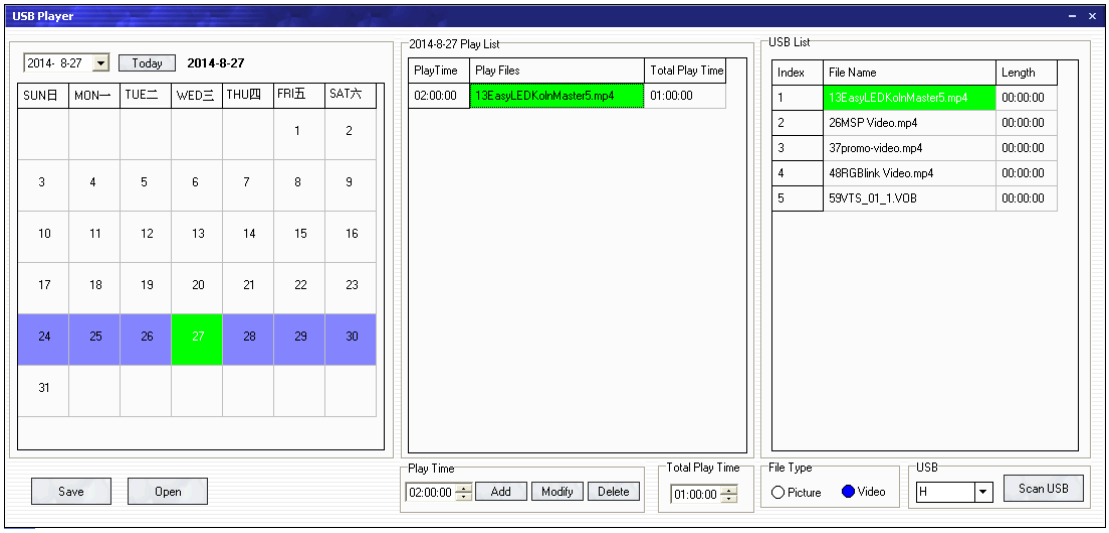
6. Click the date on the left side, and choose the broadcast date, then set the Play Time and Total Play Time. After setting, click "Add". Then double click the file on the right side, and add the file to the play time that just set. User can also delete the file in play time by double-clicking the file on the middle area. Repeat the above operations, add other play time, and click "Modify", "Delete" to modify or delete the file. For example, set play time at 2 o'clock, and set total time for 1 hour, shown as follows:



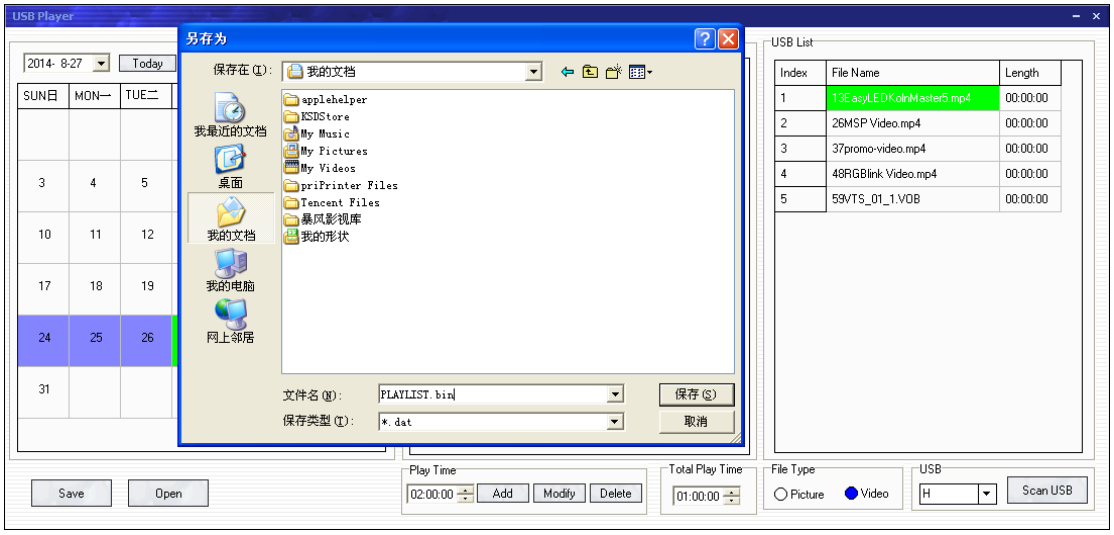
7. For the day play list that already set, users can click the right mouse to copy to day, week, month, or choose the date that need to copy, push "Ctrl + C" to copy, and push "Ctrl + V" to paste to the date. For example, copy to week, shown as follows:

6. System Setup and Operation

How to Set up the USB Playlist



8. After setting up the playlist, click "SAVE", and name the file as PLAYLIST. Bin.



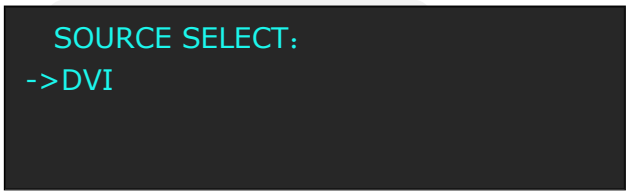
9. Copy the PLAYLIST.bin file to the USB.

10. Insert the USB to the USB1 port in VSP 112U, reboot the device.

11. Set the date and time for VSP 112U: push the [MENU] button to enter to the menu items, choose <SYSTEM>, push the knob to confirm, turn the knob, and choose <DATE&TIME>, set the time as current time. Then choose USB1, enter the USB menu items, choose Play Order, push the knob to confirm and then choose PLAYLIST, USB playlist setting is finished.

How to Realize Single Image Switching

Boot the system default CV1 to the current input source, if need seamless switching other source such as DVI, push DVI key, OLED module display as follows:



CV1 button light turns off after pushing DVI button. DVI button light is on if the DVI signal is effective and stable. And if the DVI signal is invalid or no input, DVI button light will flash.

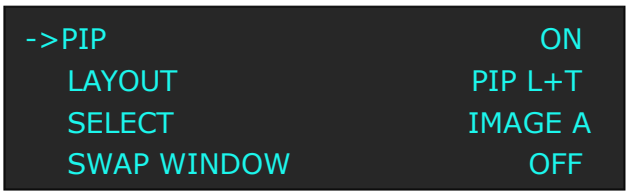
Note

Seamless switch: means signal switch will not appear any flash point, black, shaking or delay.

How to Set up the PIP

Push the [MENU] button, and choose <PIP>, push the knob to confirm.

Choose PIP, and set “ON” to enable the PIP function. OLED module shows as follows:



LAYOUT: User can choose 7 kinds of PIP layouts, here we take 3 layout for example. The corresponding results are as follows:

PIP L+T PBP L+R PBP T+B

SELECT: Can choose to set the size or position of IMAGE A or IMAGE B individually.

SWAP IMAGE: User can set PIP to swap exchange, when choose ON, it can realize the Image A and Image B switching.

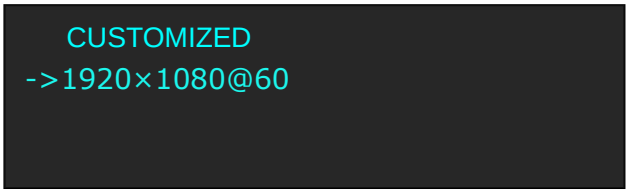
How to Do Customized Output Resolution

Push the [MENU] button to enter the menu items, turn the knob and go to <OUTPUT FORMAT>, push the knob and confirm to go into the <OUTPUT FORMAT> menu, as following:

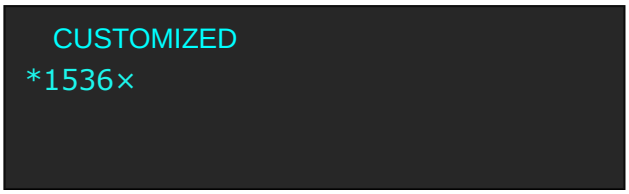
STANDARD--Standard resolution.

CUSTOMIZED--Used defined resolution setting.

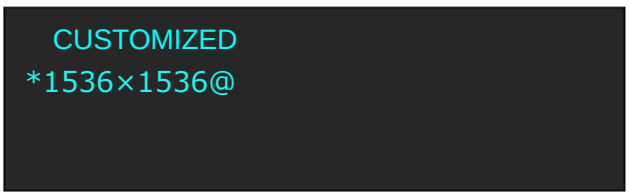
Push the knob and go into <CUSTOMIZED> menu:



Turn the knob on each digital position, and change the value of the digital by the digital buttons on the front panel. For example, input 1536 as following:



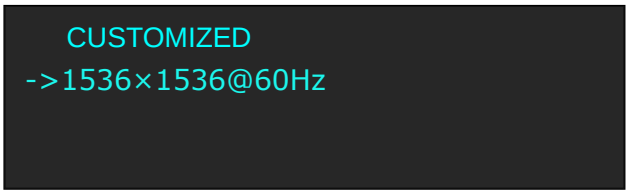
After the digital push knob will add ×, means before × is the horizontal size. Same operation for vertical size, for example input1536 as following:



After the digital, push the 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. Use the digital buttons to finish the settings, For example, input refresh rate 60.

6. System Setup and Operation

How to Do Customized Output Resolution



After input all the values, push the knob to enable VSP 112U to output this resolution. VSP 112U will take 5~10 seconds to enable this output resolution.

Note

All the resolution inside the value 2048 x 1152 x 60 = 141557760 can support.
For example:
1) 1536x1536x60=141557760 is OK.
2) 2560x1536x60=235929600 is too big, can not support.
3) 2560x1152x50 is OK.

How to Set up the Size and Position of the Single Image

Push the [SCALE] button and enter to the SCALE function menu. The button 0~9 are on, turn the knob or input the number to adjust the size, OLED module displays as follows:

H SIZE: Width setting.

V SIZE: Height setting.

H POS: Horizontal phase setting.

V POS: Vertical phase setting.

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

How to Realize the Screen Size Setting

VSP 112U supports the screen parameters to meet the requirement where user want to switch between scale screen size and full display size (like monitor). This is only enable for a single display window. Following is an example of a screen size is1408 x 832.

Operator can defined the VSP 112U output resolution from standard output resolution list or customized the output resolution which is higher than1408 x 832. For this application 1440x900 is an example:

Push the [MENU] button to go into the menu items, and turn the knob goes to <SCREEM PARAMETERS>, push the knob and goes into the <SCREEN PARAMETERS> menu as following:

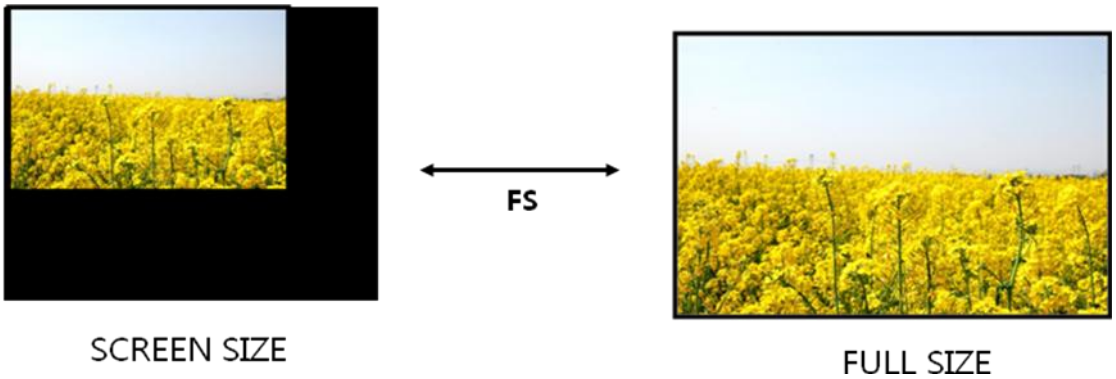
H SIZE: Horizontal pixels, turn knob and use the digital button to input the value1408.

V SIZE: Vertical pixels, turn knob and use the digital button to input the value 832.

H POS: Horizontal position, default value is 0, set the value as the way H SIZE and V SIZE.

V POS: Vertical position, default value is 0, set the value as the way H SIZE and V SIZE.

MODE: Mode option, enable SCREEN SIZE.



How to Set up Image Zoom

The image can be zoom in horizontal or vertical separately, to meet the special effects required.

Push the [MENU] button to go into the menu items, and turn the knob to go to ZOOM menu and push the knob to confirm to go into ZOOM menu items as following:

V UP: Zoom in vertical and the image will be zoom in to the top direction from its bottom.

V DOWN: Zoom in vertical and the image will be zoom in to the down direction from its top.

V UP/DOWN: Zoom in vertical but in both top and down direction from its middle.

H LEFT: Zoom in horizontal and the image will be zoom in to the left direction from its right.

H RIGHT: Zoom in horizontal and the image will be zoom in to the right direction from its left.

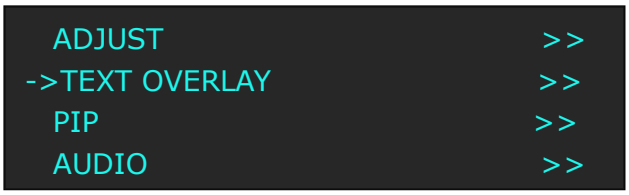
H LIFT/RIGHT: Zoom in horizontal but in both left and right direction from its middle.

CENTER: Zoom in 4 corner direction from center.

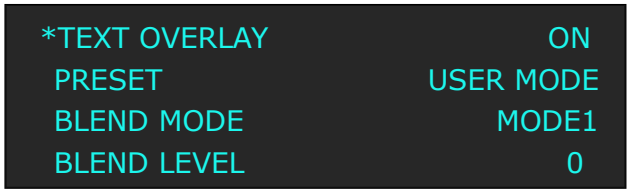
How to Realize the Text Overlay Setting

Before setting the text overlay, please make sure the input channel of the text. For example, set VGA input as the text channel. Then make sure the channel that the text will overlay, for example, overlay the text on CV1 channel. The operations are as follows:

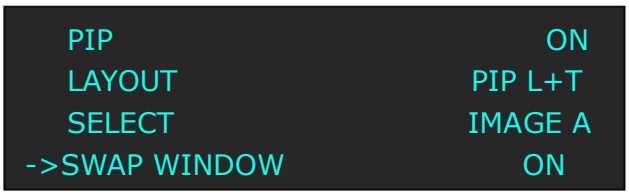
1. Push VGA button to make sure there is VGA input.
2. Push CV1 button to make sure there is CV1 input.
3. Push the [MENU] button, turn the knob, and choose <TEXT OVERLAY>, push the knob to confirm.



Then enter into <TEXT OVERLAY> menu items, turn the knob, and choose <TEXT OVERLAY>, push the knob to confirm, turn the knob again, and choose “ON” to enable the text overlay function.



4. Make sure VGA input is IMAGE B, and CV1 input is IMAGE A, if not, choose <SWAP WINDOW> option in <PIP>, and choose “ON” for <SWAP WINDOW>.

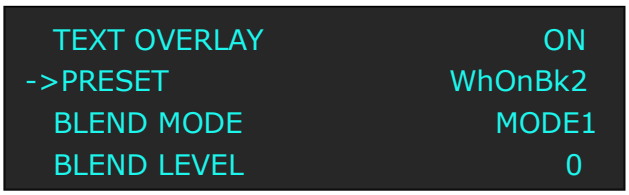


5. That is, choose the VGA image in “IMAGE B” in <SELECT> in <PIP> menu, and push [SCALE] button to adjust the size and position of VGA

image, then set the VGA image to the required position.

The standard position and size is: ensure the VGA image overlay on the CV1 image, display normally and without black edges. If there are black edges around VGA image, choose <ZOOM> option in <PICTURE> to adjust.

6. Set the text overlay mode: choose <PRESET> option in <TEXT OVERLAY>, push the knob to enter into the <PRESET> menu items. Turn the knob to choose the preset mode, for example, set the VGA text as WhOnBk, choose WhOnBk1 or WhOnBk2 (Note: Text Overlay only support monochrome subtitles), user can also adjust the <BLEND MODE> or <BLEND LEVEL> to get a better effect.



7. Push the [SAVE] button to save the above parameters.

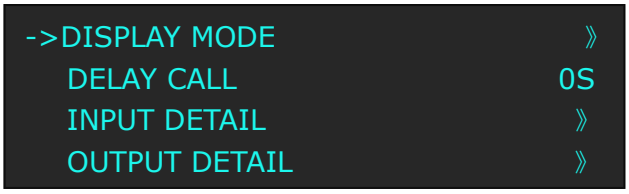
How to Realize Test Pattern Output and Settings

Test Pattern is used to calibrate the screen or system, especially when there is not standard input measure instrument.

There are 66 kinds of test patterns for VSP 112U.

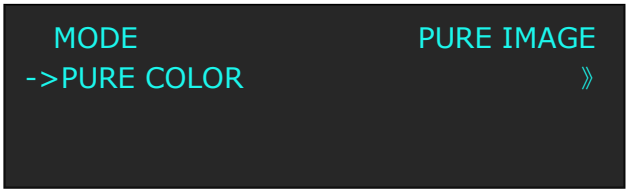
Push the [MENU] button and go into the menu items, turn the knob and go to <SYSTEM> menu as following:

Push the knob and go into the <SYSTEM> menu. Turn the knob and go to <DISPLAY MODE> menu as following:



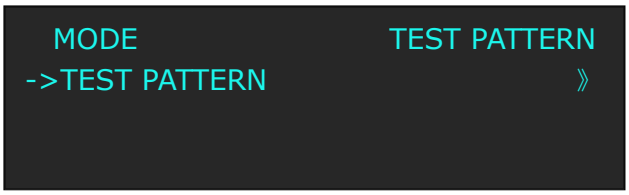
Push the knob to go into the <DISPLAY MODE> menu. Turn the knob and go to <PURE COLOR> or <TEST PATTERN> option.

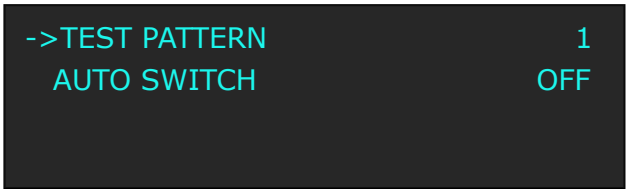
<PURE COLOR>: Push the knob and go into the menu, RED color range is from 0~255, GREEN is from 0~255, and BLUE is from 0~255.



<TEST PATTERN>: Push the knob and go into the menu, there are 66

kinds of test pattern options ready. If set the Test Pattern enable as auto switching mode. VSP 112U will output all the Test Pattern one by one, and the interval between each is 1-10S.





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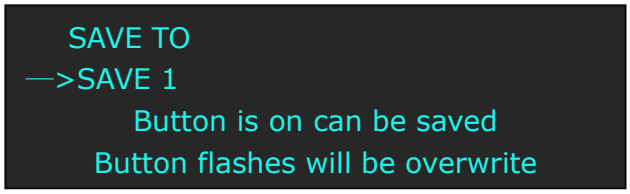
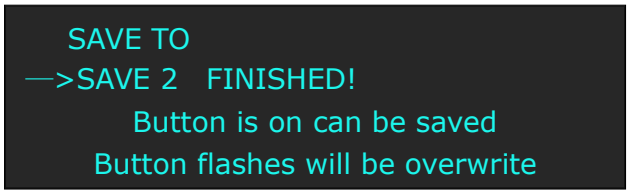
How to Save the Parameter

Save user mode to the customer for different scene directly call, leave out the edit operation inconvenience, VSP 112U provides ten save preferences.

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



2. Turn the knob, and choose the position that will save, push the knob to confirm.
3. The figure: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 down of the buttons means SAVE1~10, user can also push any button to save. For example, save to SAVE 2, push button 2, the OLED panel will show as follows after finish saving.

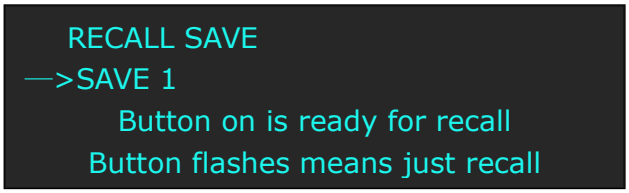


4. Push the [MENU] button to disable the SAVE function.

How to Load the Saved Parameter

Save user mode to the customer for different scene directly call, leave out the edit operation inconvenience, VSP 112U provides ten save preferences.

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



2. Turn the knob, and choose the position that will load, push the knob to confirm.
3. Push the [MENU] button to disable the LOAD function.

7. Common Questions and Solutions

In This Chapter

This chapter provides the common questions and solution for the video processor. The following topics are provided:

No Output in LED Display

Confirm If There is Any Input Signal

Push the [MENU] button to find "INPUT" and turn the knob to enter to the "INPUT RES INFO" to see whether the input signal is normal, suggested the "NO INPUT" signal does not come in, check the front-end signal lines, and please note to do dual display or extended in computer, user can enter other format signals to view in the same operation.

Confirm If Signal Output

Find a belt VGA input (best for DVI) display, connect to the corresponding output port of processor, and check whether the signal is correct on the monitor. If not display properly, please check whether there is input signal, or if input wire interface is taken tight, output wire interface is picked up tightly. If display normally, check if sending card is normally working or need to replace sending card test.

Flash Point in LED Display Output

Confirm If Monitor Output is Normal

Find a belt VGA input (best for DVI) display, connect to the corresponding output port of processor, and check whether the signal is correct on the monitor. If display normally shows and no flash point, please check whether DVI outlets put tight or replace to DVI line of sending card. If display flashes point, please judge if input signal, wire, and interface are normal.

LED Display Only Displays Part of the Image

Signal Needs to Scale

Press [SCALE] button in the processor and knob to adjust the actual screen size of the screen, then push the knob to confirm.

No Display in the Second Half Part of LED Display

Resolution is Insufficient

Check the points of the screen width and height, choose the resolution to bigger than screen width by adjusting the output format, and push the knob to confirm.

Can not Play the USB Video

Format Error in the File

VSP 112U supports the image formats including: JPEG, BMP and PNG, supports the video formats including: MPEG1, MPEG2, MPEG4, H264, RM, RMVB, MOV, MJPEG, VC1, DivX and FLV. Suggest user save the picture as the format of .bmp or .png format since the format of .jpg can not be well supported. For the image that can not play, user can convert the original image to the format of .bmp or .png. For video files, user can save the video file as the format of .rmvb, and for the video that can not play, user can convert the original file to the format of .rmvp. User needs to get the corresponding format rights.

Left Screen Appears Two Black Sides

Adjust DE Deviation

This phenomenon needs to adjust the DVI output and DE migration of the processor, choose “ADJUST” by pushing [MENU] button and choose “ OUTPUT ADJUST” for DVI1 adjust, adjust the horizontal and vertical DE, and save to the corresponding channel after setting up, save to SAVE1 by default.

A. Specification

BNC Input	
Number of Inputs	2
Supported Standards	PAL/NTSC
Signal Level	1Vpp±3db (0.7V Video+0.3v Sync) 75 ohm
Multiplex	480i,576i
VGA DB15 Input	
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	1024×768×60, 800×600×60, 640×480×60, 1280×720×60, 1280×800×60, 1280×960×60, 1280×1024×60, 1440×900×60, 1400×1050×60, 1600×1200×60, 1680×1050×60, 1920×1080×60, 1366×768×60
DVI Input	
Number of Outputs	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
Format Standard	HDMI 1.3
USB Input	
Number of Inputs	2
Connector	Standard USB port
Supported Standard	Support general Image and video formats
DVI Output	
Number of Outputs	2
Connector	Standard DVI-I Socket
Signal Level	TMDS pw, 165MHz bandwidth
Supported Resolution	VESA: 800×600×60Hz, 1024×768×60Hz, 1024×768×75Hz, 1280×720×60Hz, 1280×720×50Hz,

	1280×768×60Hz, 1280×800×60Hz, 1280×1024×60Hz, 1360×768×60Hz, 1366×768×60Hz, 1400×1050×60Hz, 1440×900×60Hz, 1600×1200×60Hz, 1680×1050×60Hz, 1920×1080×60Hz, 1920×1080×50Hz, 1920×1200×60Hz, 2048×1152×60Hz, 2560×812×60Hz, 2560×1152×50Hz.
VGA Output	
Number of Outputs	1
Connector	Standard DB15 Socket
Supported Resolution	VESA: 800×600×60Hz, 1024×768×60Hz, 1024×768×75Hz, 1280×720×60Hz, 1280×720×50Hz, 1280×768×60Hz, 1280×800×60Hz, 1280×1024×60Hz, 1360×768×60Hz, 1366×768×60Hz, 1400×1050×60Hz, 1440×900×60Hz, 1600×1200×60Hz, 1680×1050×60Hz, 1920×1080×60Hz, 1920×1080×50Hz, 1920×1200×60Hz, 2048×1152×60Hz, 2560×812×60Hz, 2560×1152×50Hz.
Signal Level	R, G, B, Hsync, Vsync: 0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75 ohm black level: 300mV Sync-tip: 0V
Function	
Input channel configuration	Support each input channel signal programming configuration
PIP	Support PIP and PBP for any channel
Extras	
Communication	Remote RS232, USB control
Power Supply	85-264V 2.1A IEC-3
Working Environment	0°C~45°C
Stored Environment	10% to 90%
Product Warranty	3-year parts and labor warranty

B. Contact Information

Warranty:

All video products are designed and tested to the highest quality standard and backed by a full 3-year parts and labor warranty. Warranties are effective upon delivery date to customer and are non-transferable. RGBlink warranties are only valid to the original purchase/owner. Warranty related repairs include parts and labor, but do not include faults resulting from user negligence, special modification, lighting strikes, abuse(drop/crush), and/or other unusual damages.

The customer shall pay shipping charges when unit is returned for repair.

Headquarter: S603~604 Weiye Building Torch Hi-Tech Industrial Development Zone Xiamen, Fujian Province, P.R.C.

- **Tel:** +86-592-5771197
- **Fax:** +86-592-5771202
- **Customer Hotline:** 4008-592-315
- **Websites:**
  - ~ http://www.rgblink.com
  - ~ http://www.rgblink.cn
- **E-mail:** support@rgblink.com

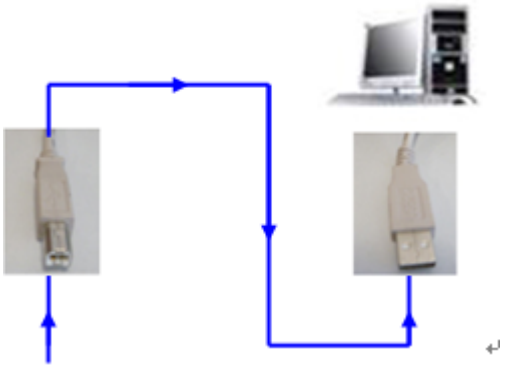
C. Software Upgrade

The VSP 112U software upgrade steps are as follows:

1. Communication Firmware Upgrade

Upgrade by copy the file, the name of the file is: VSP112U_MCU_Vxxx.MCU, "xxx" is the version number, the upgrade steps are as follows:

(1) Connect the USB interface of VSP 112U to the computer with a USB cable.



(2) Plug in the power cord, and make sure the device is in normal operation.

(3) Push MENU button, and enter [MCU UPGRADE] option, operation steps are: MENU→SYSTEM→MCU UPGRADE→SEL.

(4) Open the USB drive that plug into the computer, and delete the "firmware. Bin" file in the USB drive, then copy the MCU file "VSP112U_MCU_Vxxx.MCU" to the USB driver, program loading is complete after the file has been copied.

(5) Restart the device, and enter the menu to check if the version is right, factory reset is completed. Operation steps are: MENU→SYSTEM→SYSTEM INFO.

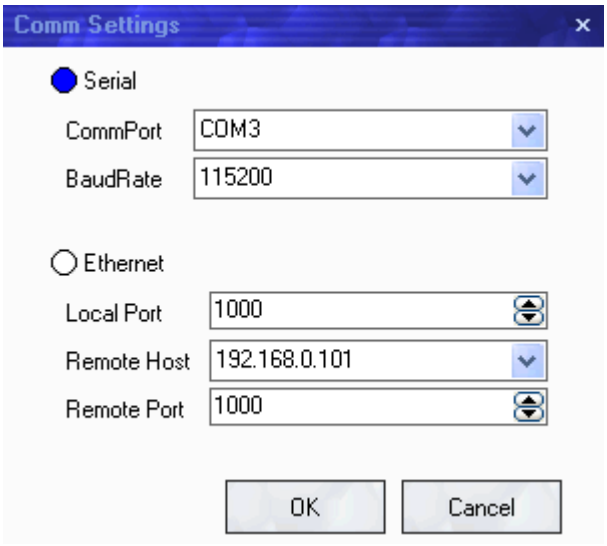
2. Image Processing Firmware Upgrade

Upgrade by windows control program, the name of the file is: bin.bin, and the upgrade steps are as follows:

(1) Connect VSP 112U to the computer.

(2) Plug in the power cord.

(3) Open the windows control program, and set the serial, set baudrate as 115200.



(4) After setting, enter the “VProcessor”, and choose “Update” option, choose file path, and then click “Start”, if the interface prompts “Down Load Success”, the upgrade is successful.