

# LED Video Controller

## VS400 Series

— English

# User Manual



## Safety Instructions



This symbol prompts the user that there are important operating and maintenance instructions in the device user manual.



This symbol warns the user that there is a dangerous voltage that is exposed inside the device enclosure and there is a risk of electric shock.

## Note

Read the instructions—All safety and operating instructions must be read and understood before using the device.

Save instructions manual—The user should save the safety instructions for future use.

Warning—The user should follow all safety and operating instructions on the product and user guide.

Avoid adding—Do not use tools or additional equipment that the manufacturer does not recommend to avoid danger.

## Warning

Power—This device can only be used with the power source indicated on the product. The equipment must be powered by a grounded power supply system. The third line (ground) is a security facility.

Unplug the power supply—To safely unplug the power supply from the device, unplug all devices or the power cord of the desktop power supply, or any power cord that is connected to the mains system.

Power cord protection—Route properly to avoid being stepped on or squeezing heavy objects.

Maintenance—All repairs must be performed by a certified service person. There are no user-replaceable parts inside the unit. To avoid the risk of electric shock, do not attempt to open the device cover yourself repair the device.

Vents—There are ventilation slots or holes in the unit casing to prevent overheating of sensitive components inside the unit. Do not block the ventilation holes with anything.

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# Contents

Product Introduction .....	3
About LED Video Controller .....	3
Panel .....	4
Rear Panel .....	4
Front Panel .....	5
Menu System .....	7
Main Menu .....	7
Default Menu .....	8
Settings And Operation .....	8
Language .....	8
Key Lock .....	9
Unlock .....	9
Reset .....	9
Output Resolution .....	9
Signal Switching .....	9
Black And Freeze Settings .....	9
Partial Picture .....	10
Mode Saved And Recalled .....	10
Adjust Brightness Contrast .....	11
VGA Input Image Correction .....	11
USB Player Settings .....	11

# Product Introduction

This manual covers several similar model instructions, including how to use, install and configure the LED Video Controller. In addition, the content also covers the knowledge of LED Video Controllers and LED video systems. Please read this manual in detail before using the LED Video Controller.

## About LED Video Controller

AMS-VS400 is a seamless effect switching Video Controller that supports digital HD input, analog HD input, analog SD input, and audio input for simultaneous audio and video output on all channels.

The following lists the audio and video input format tables supported by the LED Video Controller:

DVI Input	Support VESA Standard, Max 1920x1080@60Hz
HDMI Input	480i/p 676i/p 720p 1080i/p Color Depth 8/10/12 Bit
VGA Input	Support VESA Standard, Max 1920x1080@60Hz
Composite Video Input	PAL、NTSC、PAL-M/N、SECAM
Analog Audio Input	Analog Audio Signal
Output Format:	
DVI Output	Any Resolution, Max 1920x1080@60Hz Custom Resolution Output
Analog Audio Output	Any Channel Analog Audio Signal

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## LED Video Controller Product Features

**Multiple Video Input**——AMS-VS400 uses 5/6 channels of video input, including 1 AV composite video, 1 VGA, 1 DVI, 1 HDMI, 1 USB. 1 SDI/1WiFi (Expanding) , Basically the needs for civil and industrial use have been covered. All video input switching can be seamlessly switched.

**Output Interface**——AMS-VS400 Video Controller has 1 video outputs, 1 video outputs use DVI output connectors, which are programmed output to the LED sending card or display.

**Seamless Switching Of Any Channel**——The AMS-VS400 Video Controller can also seamlessly switch between any channels.

**Output Resolution**——AMS-VS400 has designed a number of practical output resolutions for users width 3840 points and high 1920 points. Applicable to a variety of dot matrix displays. Multi to 10 sort output resolutions for user selection and adjustment to point-to-point output.

**Mode Save Function**——AMS-VS400 uses 10 sets of user presets. Each set of user presets can store all user setting parameters, which can implement parameter backup and field calling functions (but need to enter the system menu calling).

**Instant Storage Technology**——The instant storage technology solves the user's cumbersome setup and manual storage process, that is, the user does not need to perform manual save operation after adjusting or adjusting the parameters, and the AMS-VS400 automatically stores the user parameters in the EEPROM, even after powering off, The parameters before the power failure remain in the device.

# Panel Introduction

## Rear Panel



Figure 1 - Video Controller Rear Panel

»» **AC Power Input, Switch** — Connect the Video Controller with an IEC standard power cord. The input power is 100-240V AC, 50-60Hz.

»» **Video Input** — Processor can receive digital video signals, analog video signals, and composite video signals. Following are the input standards for each interface.

- AV Composite video input, using BNC interface, input video supports PAL, PAL-M/N, NTSC, SECAM. Can connect DVD players and camcorders, etc.
- DVI digital video input, using DVI-I standard interface, can be DVI-I or DVI-D cable, video input format supports VESA standard.
- HDMI HD video input, using HDMI-A standard interface, input video supports HDMI1.3 standard and VESA standard. Commonly used in connection stations Computer and HDMI HD player.
- VGA video input, using DB-25 standard interface, input video supports VESA standard, used to connect desktop computers, laptop or other VGA video output devices.
- SDI video input, using SDI standard interface, input video supports VESA standard, used to connect SDI camera, SDI HD video output device.
- USB video input, using USB standard interface, input video supports VESA standard, used to connect desktop computer, laptop or other USB Video output device.

»» **Video Output** — LED Video Controller programming video output interface

- DVI video output, using DVI-I connector, the output video format is set by the processor, 1 DVI simultaneously output the same signal. Often used to connect to an LED sending card or monitor.
- Audio output, If HDMI/USB signal is used, audio can be output synchronously.

»» **LED Sending Card** — VS400 series has built-in the MSD600 sending card, the card has 4 RJ45 network port, Every gigabit Ethernet ports support up to 650,000 pixel, also has a location can be installed with 1 sending cards. 5V power connectors and 2.0x4 PIN connectors are reserved inside. Plug in the 5V power supply after installation.

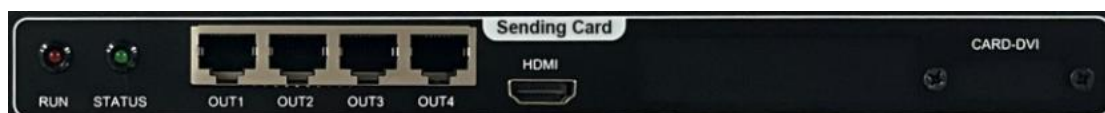


Figure 2 - LED Sending Card

»» **Control Port** — RS232 is used for upper computer control interface, The USB-B interface is used for internal program upgrades.

## Front Panel



Figure 3—Video Controller front panel

- »» **LCD Display** — Display menu and current information.
  - »» **Menu Operation Button** — Menu operation key area contains “Knobs” & “ESC” and the knob “Confirm and Adjust”. Here are the meanings and usage of each button:  
**OK& ESC** key, or return to the previous menu.  
**Knob**, Press the OK button to enter the menu or sub-menu key to confirm the function. Rotate around + plus" - "minus" operation, you can adjust the menu position or adjust the parameter value becomes small.
  - »» **Input Selection** — In the INPUT button area, all 6-channel input switching keys and VGA auto-correction function keys are included. button indicators in the keypad have difference states will show on the device LCD screen.
  - »» **The button lamp flashes slowly**: Flashing interval of about one second, and has been in flashing, indicating that the channel table when no signal switching.
  - »» **Button light flashes quickly**: When you press the button, the button indicating rapid flashing time is about 0.3 seconds, indicates that the device is currently being tested and decodes the input video.
  - »» **button indicator light**: Indicates the current channel signals are connected properly or the current function is active. Here is the Enter button on regional detailed description of the function buttons.
- The following is a detailed description of the functions of the buttons in the input keypad.



Figure 4 - INPUT key area, function key area

- **AV1** composite video switching button.
- **VGA** button, VGA input switching button and automatic correction button (AUTO function). When the input channel is VGA, press the VGA button repeatedly, the Video Controller will correct the Current VGA channel and make the picture output normal.  
 AUTO function of VGA channel: When the input channel is VGA, and the VGA has picture output, press VGA (AUTO) again to renew calibration the current VGA signal.
- **DVI**、**HDMI** key, correspond DVI and HDMI video input interfaces on the rear panel.
- **SDI** key, SDI HD Video Input.
- **USB** key, USB Disk Input.

»» **Function Key Area** — Function key area contains the on-screen mode, preset template save and recall, black/freeze

- **PART** button: Part of the screen display mode, the user settings menu, good splicing interception parameters section of the screen, press this button part of the screen to display the results. In the following sections a detailed description of the operation.
- **FULL** button: A full screen mode, by default, all input channels are full-screen mode display mode. When the user wants to set the mode from part to full-screen mode, simply press **FULL** button.
- **MODE** button: To load preset scenes shortcuts. In the default state, press the **Menu** button to bring up a list of preset scenes, together with the function button menu to bring up the preset scene. Save and recall presets on the scene, in the following sections will be described in detail.
- **Black** button: The button is a composite key, can one key black the display, also can freeze the display.
- **OUT** key: The controller output resolution.

»» **USB Area** — Display menu and current information.

- **Control**: The USB-B Interface, also is control system control interface, which can set screen parameters through computers and software.
- **Disk**: The USB-A Interface, It is also the insertion interface for external USB player disk, ensuring that the USB disk format is FAT32 format.

# Menu System

## Menu Structure Diagram

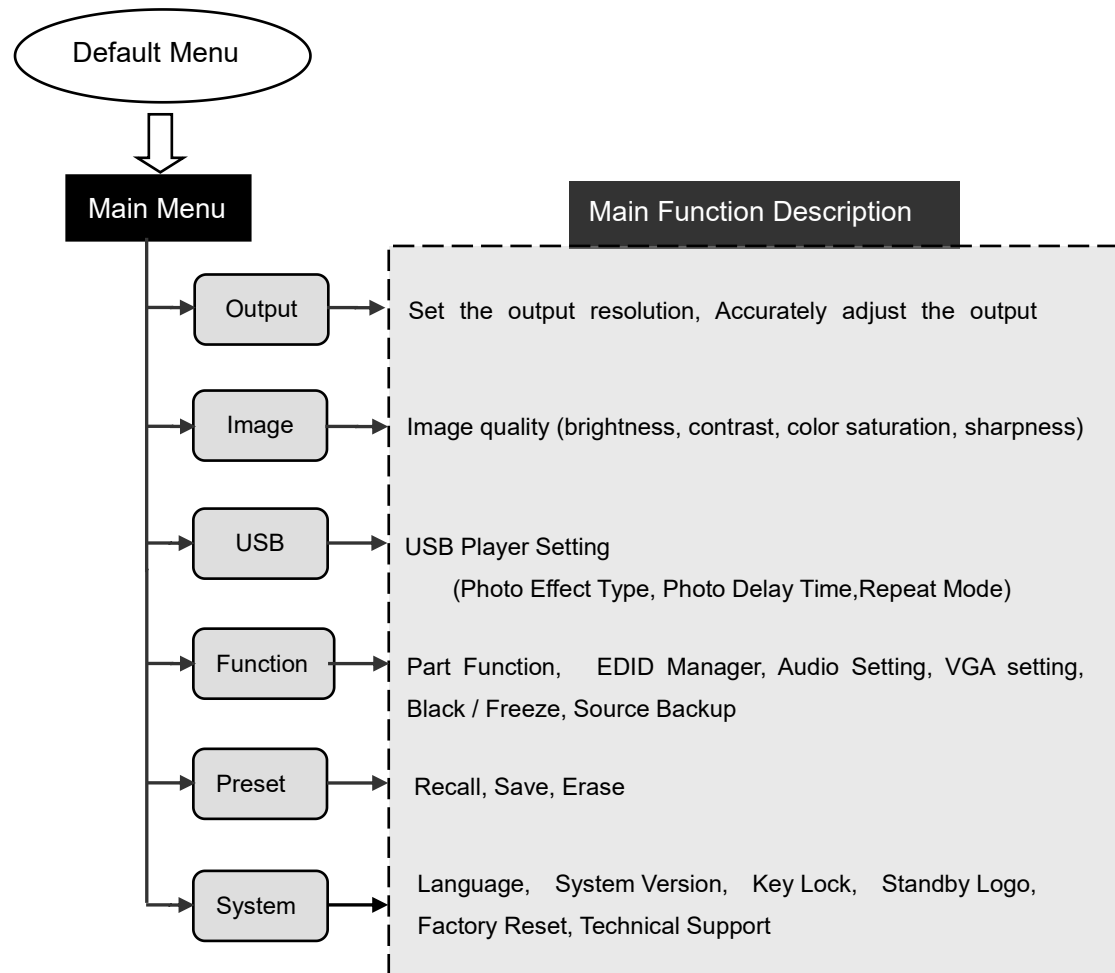


Figure 5 processor main menu structure diagram

## Menu Operation

Operation keys of the menu mainly include "ECS " return button, "OK" confirm button, man-machine interface is a fullcolor LCD screen.

Start device process as follows:

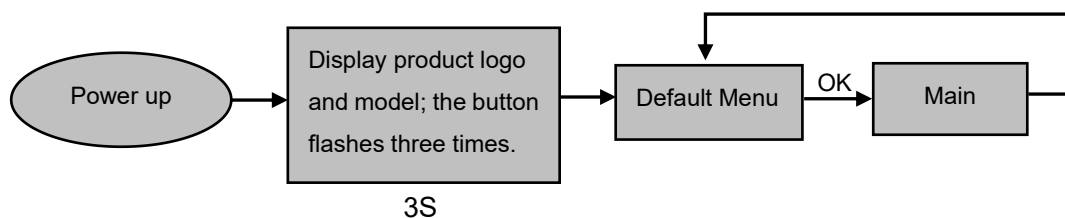


Figure 6 - Processor boot process and enter the main menu



## Default Menu

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

Under the default menu, All input selection keys and function keys are available.

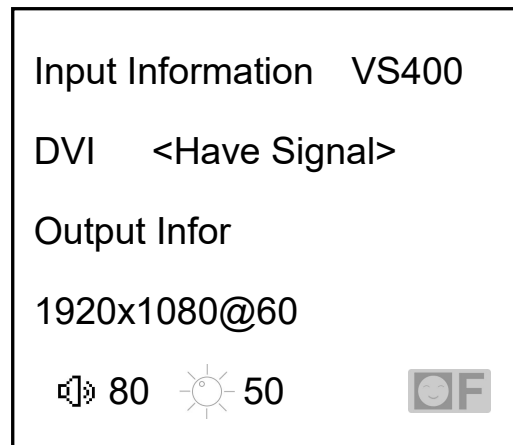


Figure 7 - Default Menu

## Main menu

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

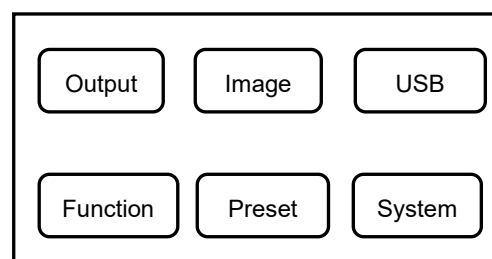


Figure 8 - Main Menu

# Setting And Operation

## Language

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

**Default menu → main menu → system → language**

**默认菜单→主菜单→功能→语言**

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

## Key Lock

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

**Default menu→Main Menu→System→Key Lock→ON**

## Unlock

Press the “OK” button for 5 seconds, the processor will automatically unlock.

## Reset

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

**Default Menu → Main Menu → System → Factory Reset → Reset Confirmation**

After the reset is completed, all user parameters are restored to the factory state, please use caution.

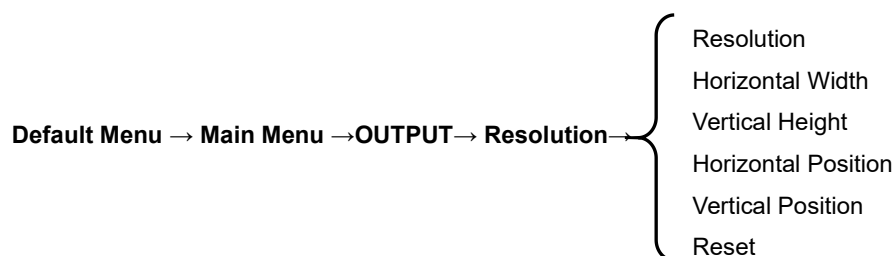
## Output Resolution

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

1. select a larger than screen resolution

**Default menu→Main Menu→Output→Resolution→Output Resolution→Confirmed**

(1) Accurately adjust the output resolution



Tip: After the user resets the output resolution, the system will reset all parameters to ensure the consistency of the data. The user can precisely adjust the resolution only to be smaller than the currently selected resolution. When the precisely adjusted resolution is equal to the currently selected resolution. The horizontal start value and the vertical start value cannot be adjusted.

## Signal Switching

Seamless switching between any channel, fast switching, and switching the input channel, you can instantly switch the video output.

## Black And Freeze Setting

Black / freeze share an operation key "BLACK", which is displayed as "BLACK" key in the menu system.

Its setting method is as follows:

**Default menu → main menu → function → black screen / freeze button**

After setting, press the BLACK button directly to achieve black screen or screen freeze.

## Partial Picture

Interception of part of the screen function is unequal extension splicing function. In actual use, may be used to intercept the partial screen display, displays only a partial area of input channels. Such as the Windows user interface, users simply DVI1 channel video playback window, the other input channel to full screen. Processor provides users with two control keys, as shown below.

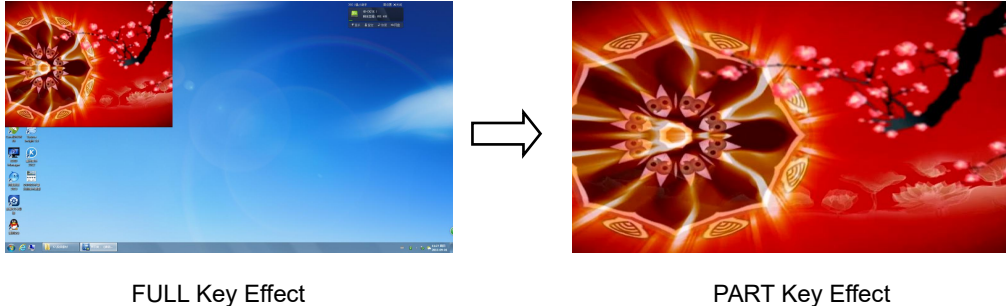


Figure 9 - Partial screen diagram

If want to manually set the intercept parameters, the settings are as follows:

(1) Select the channel to capture part of the picture, such as DVI;

**Default Menu → Main Menu → Function → Part Function → on**

**Default Menu → Main Menu → Function → Part Function → Part Mode → User**

**Default Menu → Main Menu → Features → Part Function → Horizontal Width (User Defined)**

**Default menu → Main Menu → Function → Part Function → Vertical Height (User Defined)**

**Default menu → Main Menu → Function → Part Function → Horizontal Position (User Defined)**

**Default menu → main menu → function → partial function → Vertical Position (User Defined)**

## Mode

Preset is to facilitate users to use quickly recall commonly used in a variety of scenarios, reducing the user when the operation is repeated complicated settings, improve work efficiency. Each contains a preset mode signal channel mode, the display mode of various parameters, image quality settings. Processor provides 10 preset save space, here to save and recall preset mode operation.

## Save Mode

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

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

In saving mode sub-menu have Preset [1] to Preset [10], four storage space, the user can choose.

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

## Recall Mode

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

1. Use **MODE** button

In the default menu state, press the **MODE** button to call up the menu to enter the preset scene. Use the knob buttons to select the saved preset scene, press **MENU** button to confirm.

2. Setting in menu

**Default Menu → Main Menu → Preset → Recall Mode → Preset [1] → confirm**

## Adjust Brightness Contrast

processor's unique brightness contrast adjustment technology, after adjusting the brightness the color reproduction degree is high, picture Layer is not lost. adjusting the brightness, it is best to adjust the brightness and contrast to ensure the perfect output.

**Default Menu → Main Menu → Image → Brightness → 50**

**Default Menu → Main Menu → Image → Contrast → 50**

## VGA Input Image Correction

In general, when switching to a VGA input signal source, processor automatically corrects the color, image size and position. If the processor does not have automatic correction successful, the user can implement manual correction.

Method 1: Use the AUTO key adjust (the AUTO function reuses the VGA1 key)

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

Method 2: Switching to the VGA input state, enter the menu

Enter the menu when switching to VGA input

**Default menu → Main Menu → Features → VGA Settings → Auto Adjust**

If the automatic calibration is not successful, the user can try to manually correct.

**Default menu → Main Menu → Function → VGA Settings → Horizontal Position**

**Default menu → Main Menu → Function → VGA Settings → Vertical Position**

**Default menu → Main Menu → Function → VGA Settings → Horizontal Width**

**Default Menu → Main Menu → Function → VGA Settings → Clock Phase**

**Default Menu → Main Menu → Function → VGA Settings → VGA ADC Cal**

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

## Audio and video Sync Output

Video Controller audio input (USB, HDMI, SDI), 3.5mm stereo output

## USB Player Settings

Put content into a USB disk can be playback. (Recommended) After formatting the U disk, copy it again, avoid mistake playback. U disk related parameters are set as follows:

