Processor DB15 Special Effects Switching LED Video Instruction Manual

Processor

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Contents

Introduction

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

About LED Video Processor

The LED video processor is a video processor for the mid-end seamless special effects switching market. It supports digital and analog HD input, analog SD input, and audio input, it can achieve audio and video synchronous seamless switching of all channels.

The following is a list of LED video processors that support audio and video formats.

Input formats:

- DVI input support VESA standard, up to 1920 x 1200 @ 60Hz
- HDMI input 480i/p676i/p720p1080i/p color depth 8/10/12
- VGA input support VESA standard, up to 1920 x 1200 @ 60Hz

- Composite video input PAL, NTSC, PAL-M/N, SECAM
- Analog audio input analog audio signal

Output formats:

- DVI output up to 1920 x 1280 @ 60Hz
- Analog audio output USB, HDMI audio output

The features

1. Multi-channel video input – The video processor uses 6-channel video input, including 1* CV, 1*SDI, 1*VGA, 1*DVI, 1*HDMI and 2*USB. Basically, the requirements for civilian and industrial uses have been covered.
2. Multi-audio video synchronization – 3-channel audio switching, each video can be arbitrarily combined with the corresponding audio(including HDMI audio), set up the audio and video correspondence, the video channel automatically memory the right audio.
3. Useful Video Output Interface – The processor has 2 programmable video outputs.
   Use 2 DVI output interfaces. These two videos are programmed to output to an LED sending card or display.
4. Seamless switching of any channel – Video processor video processor can also seamlessly switch between any channel, the switching time can be adjusted from 0 to 1.5 seconds. Using the fading effect, when switching the input channel, the screen can be smoothly switched to the second screen. With a quick switch, you can switch the video output instantaneously when you switch the input channel.
5. Rich output resolution – The video processor has designed a number of practical output resolutions for the user, with a maximum width of 1920 points and a maximum of 1280 points, suitable for various dot matrix displays. Up to 10 kinds of output resolutions are available to users and can be adjusted to point-to-point output.
6. Supporting one-click black screen – Black screen is an indispensable operation during the performance process. When you need to close the image output during the performance process, you can use the black screen key to achieve a fast black screen.
7. Support screen freezing – During the playback process, the current screen may need to be frozen to achieve a “pause” screen. When the screen is frozen, the operator can also change the current input selection or change the line, etc. to avoid background operations affecting the performance.
8. Part and full-screen quick switching – The video processor has a simple and practical interception of some screen operations and full-screen operations. Any input channel can independently set different interception effects, and each channel can still achieve seamless switching. Users can arbitrarily set the size and location of the current channel interception part of the screen, while the interception of other channels remains unchanged.
9. Default call function – Video processor uses 10 sets of user presets, each set of users preset can store all user settings parameters,
10. Use the MODE shortcut to quickly pull the default out – Parameter backup and quick call on site can be realized.
11. 30-Bit image lossless zoom technology -The video processor uses a dual-core image processing engine. A single core can handle 30-bit image scaling technology to achieve output from 64 to 2560 pixels, and at the same time achieve 10 times the image magnification output, that is, the maximum picture Up to 25600.
12. Unique brightness adjustment technique – which solves the situation where the brightness is reduced and the layer sense is lost, making the color reduction more realistic.

13. ACC ACM image filtering -The video processor uses ACC and ACM image filtering engines. When processing each color, the nonlinear filtering effect can make the image loss rate lowest and reduce the color authenticity.
14. Support for host computer control – Can use the computer's RS232 interface to connect video processors to use the host computer software to set output resolution, audio switching, brightness, switching signal sources, etc..

Panel

Rear Panel

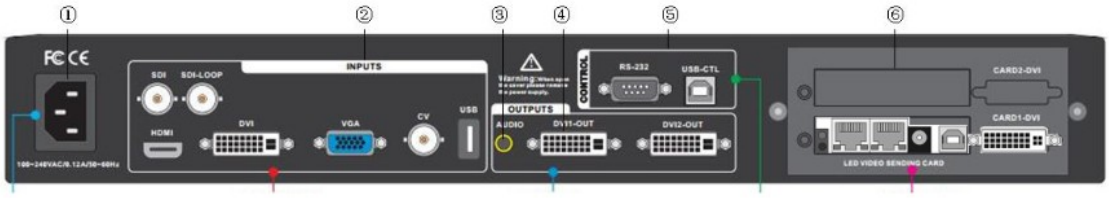


Figure 1-Video processor rear panel

1. AC power input – Connect video processor using IEC standard power cord, input power is 100-240 VAC, 50-60 Hz.
2. video input – processor can receive digital video signals, analog video signals, and composite video signals. The following are the input standards for each interface.
   ● CV1 video input, using the BNC interface, input video support PAL, PAL-M/N, NTSC, SECAM format. You can connect to DVD players and cameras.
   ● DVI input, DVI-I standard interface, use the DVI-I or DVI-D cable, the video input format supports VESA standard.
   ● HDMI HD video input, HDMI-A standard interface, support HDMI1.3 standard video inputs and VESA standards. Used to connect desktop computers and HDMI high-definition player.
   ● VGA video input, using the standard DB-25 connector, supports the VESA standard video input for connecting a desktop computer, laptop or other VGA video output device.
3. Audio Interface – Processor with 3 channel analog audio inputs, one audio output.
4. Video output – Video output interface processor programming
   ● DVI output, using the DVI-I connector, the output video format is set by the processor, two DVI outputs the same signal at the same time. Used to send the card or connected to the LED monitor.
5. RS-232 – Serial communication connector for engineering testing, the device is programmed, PC software control, communication baud rate is 115200bps.
6. LED sending card – LED sending card installation location aside, you can install one or two to send cards. When installed, the user can first open the back cover and the small bracket, mounting, internal set aside four 5V power connector, four 2.0x4PIN connectors.
   After installing the plug 5V power supply.

Front Panel

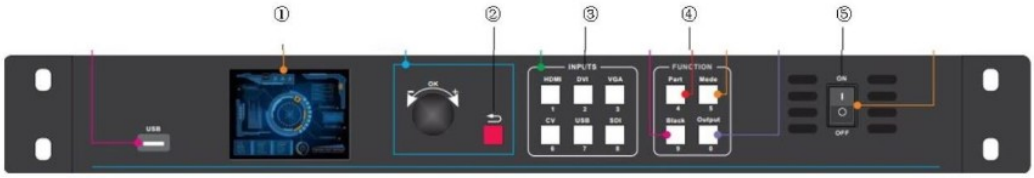


Figure 3-Front Panel

1. LCD display – Display menu and current information.
2. Menu operation buttons – Menu operation keypad with “Return key” ,Knob “confirm and adjust.” The following are included on each key.
   - ⮌ button, Exit key, or return to the previous menu.
   - Knob , press the OK button to enter the menu or submenu key to confirm the function.

   Rotate around + “plus” – “minus” operation, you can adjust the menu position or adjust the parameter value becomes small.
3. Input Selection – INPUT button in the region, including all of the input 8-channel switch button, the test pattern, screen freeze, black screen, VGA automatic correction function buttons. button Indicators of the button state in the region there are three kinds, namely:

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

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

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

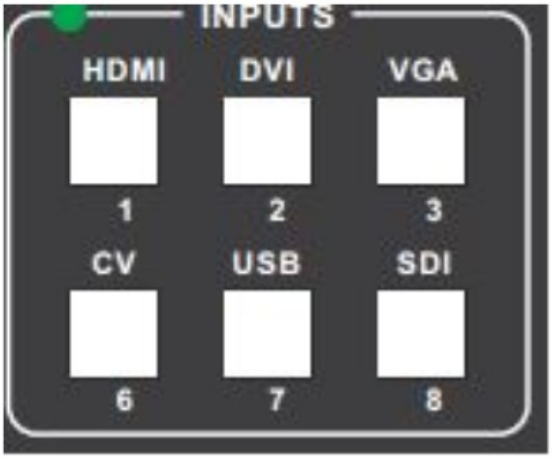
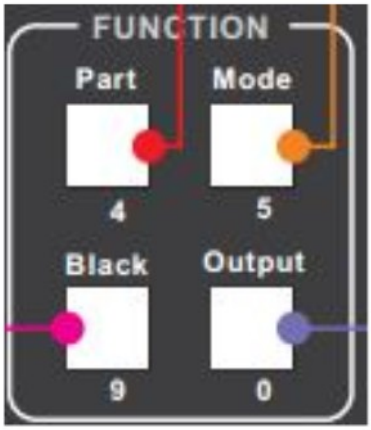


Figure 4- Inputs

   - CV, CVBS video switching button.
   - VGAbutton, VGA input switching buttons and automatic correction button (AUTO function). When the input channel for VGA1 or VGA2, repeatedly pressing VGA1 or VGA2 button VGA video processor corrects the current channel, so that the screen output is normal. VGA channel AUTO function: When the input channel for VGA1, and VGA1 have creen output, press VGA1 (AUTO) button, you can recalibrate the current VGA1 signal. VGA2 button also has the same functionality and operation.
   - DVI, HDMI bond, respectively, after the corresponding panel DVI1, DVI2, HDMI video inputs.
4. Function button area – function button area contains a wide mode, preset call, PIP and transition effects operating buttons can quickly achieve operating each function.

Functional Key



- PART key – Part of the screen display mode / full screen display mode. After the user sets the interception parameters of part of the screen in the Splice menu, press this button to display part of the screen effect. There is a detailed description of the operation in the following section.
- MODE key – Default scene loaded shortcut key. Press this button in the default menu state, you can call up the default scene list, and then with the menu function key can call up the default scene. For the preservation and invocation of default scenarios, the following sections are detailed.
- Black key – Black field / freeze screen function.
- Output key – Fast input output resolution settings.

Menu System

Menu Structure

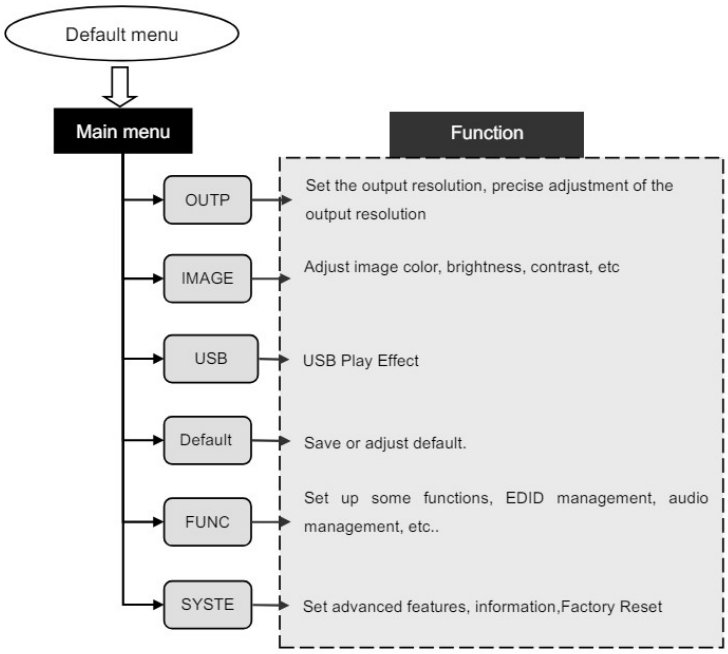


Figure 7 - Main Menu structure diagram

Operation menu

The main menu operation buttons ⮌ “exist” knob OK the man-machine interface for a 128×64 dot matrix LCD screen.
Boot process equipment is as follows:

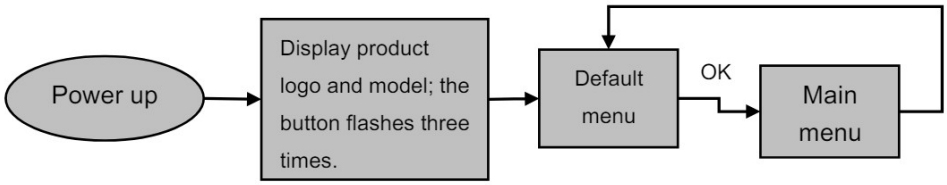
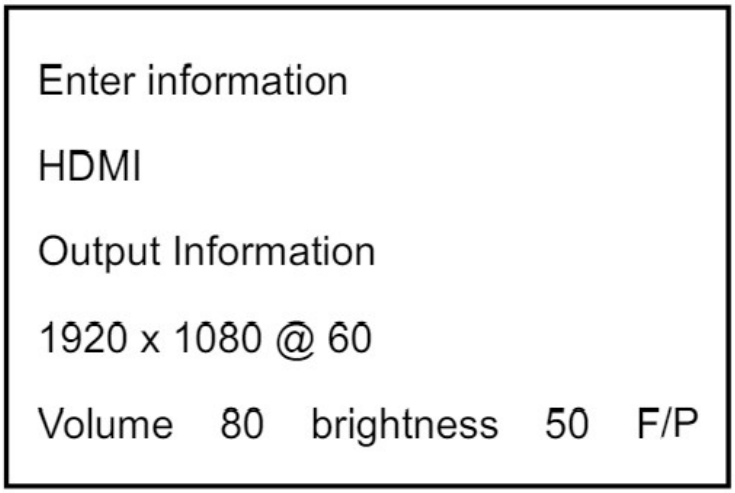


Figure 8- processor boot process and enter the main menu

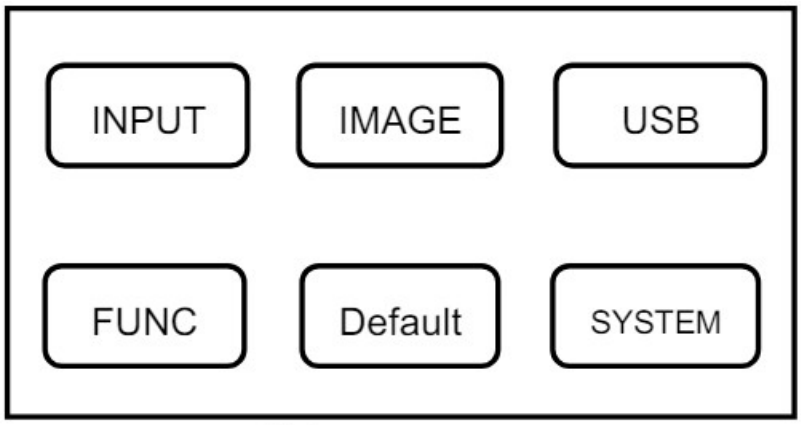
Default menu

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.



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.



Main menu

Setting and Operation

Language

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

Default Menu → Main Menu → FUNC → Language

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

Reset

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

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

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

Output Resolution

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

1. select a larger than screen resolution

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

2. to fine-tune the output resolution

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

Black/freeze screen

Black screen and screen freeze share an operation key BLACK, which is displayed as “black screen/freeze key” in the menu system. It is set as follows

Default menu → main menu → function → black screen/freeze key function

After setting, directly press the BLACK key to achieve black screen or screen freezing.

Save user’s scenario

When the user has adjusted all parameters, to enter the current default scenario, press

Default menu → main menu → default → save → default[1] → Confirmation

There is a default in the submenu of save mode[1] ~ Default[10], 10 storage spaces, users can choose. When the storage space is empty, it is shown as gray and green when the parameters are stored.

Call user’s scenario

here are two ways to call the default parameter, shortcut key call and menu call

Method 1: Call operation using the MODE key

1. In the default menu state, press the MODE key to enter the scene call menu.
2. Use the knob to select the saved default scene and press OK to confirm.

Method 2: Use the menu to call the default scenario

Default menu → main menu → default → reading → default[1] → Confirmation Erase default scenario

Default menu → main menu → default → erase → default[1] → Confirmation

Signal hot backup

Signal source heat backup is to ensure that one of the signal sources on the big screen is abnormal and can be switched to the backup signal source immediately. The details are as follows:

1. Access to the signal source heat backup operation menu

   Default menu → main menu → function → signal source heat backup

2. The selected input source is on the left and the backup input source is on the right.

   When the input source is interrupted or an exception occurs, the processor can not accept the corresponding input signal and automatically switches to the backup input source.

Adjust brightness and contrast

The unique brightness contrast adjustment technology of the processor, after adjusting the brightness, the color reduction is high, and the screen level is not lost. When adjusting the brightness, it is best to adjust the brightness and contrast to ensure that the output effect is perfect. as follows
Enter the Image Menu to set brightness and contrast
Default menu → main menu → image → brightness → 50
Default menu → main menu → image → contrast → 50

Key locks
The key lock function is to prevent users from mishandling or others from touching in a complex environment, resulting in on-site errors. Improve the performances.
Lock Key
Enable locking function in system menu
Default menu → main menu → system → key lock → open
Unlocking
Press the OK key for 5 seconds and the processor will unlock it automatically.
VGA input correction
Under normal circumstances, when switching to the VGA input source, the processor automatically corrects the color, image size, and position of the input source. If the processor is not automatically corrected, the user can implement manual correction.
Method 1: Adjust with VGA key
When the input source is switched to VGA input, the VGA key is pressed again, and the system corrects the input source.
Method 2: Use menu correction
After switching to VGA input, enter the menu
Default menu → main menu → function → VGA settings → automatic correction
If automatic correction is unsuccessful, the user can try manual correction
Default menu → main menu → function → VGA setting → horizontal position
Default menu → main menu → function → VGA settings → vertical position
Default menu → main menu → function → VGA setting → horizontal clock
Default menu → main menu → function → VGA settings → clock phase
Audio Video Synchronization
The video processor provides 6 video and 3 audio, 1 USB audio, 1 HDMI audio, and 1 SDI audio. Switches the signal source while the audio switches to the corresponding audio output.

Specifications

DVI Inputs	
Quantity	1
Connector	DVI-I
Signal Standard	DVI1.0 HDMI1.3 Backward compatible
Supported resolutions	VESA PC to 1920×1200 HD to 1080p
HDMI Inputs	
Quantity	1
Connector	HDMI-A
Signal Standard	HDMI1.3Backward compatible
Supported resolutions	VESA PC to 1920×1200 HD to 1080p
USB Inputs	
Quantity	2

Connector	USB-A
interface format video	AVI, WMV, MPG, MP4, MKV, RMVB, MOV
Supported resolutions	HD to 1080p 720P 480P
VGA Inputs	
Quantity	1
Connector	DB15
Signal Standard	R, G, B, Hsync, Vsync:0 to1Vpp±3dB (0.7V Video+0.3v Sync) 75 ohm black level 300mV Sync-tip 0V
Supported resolutions	VESA PC to 1920×1200
※ SDI Inputs(Optional	
Connector	1
Signal Standard	BNC
Supported resolutions	SD/HD/3G-SDI
Connector	1080p 60/50/30/25/24/25(PsF)/24(PsF)720p 60/50/25/24 1080i 1035i 625/525 line
CVBS Video Inputs	
Quantity	1
Connector	BNC
Signal Standard	PAL/NTSC 1Vpp±3db (0.7V Video+0.3v Sync) 75 ohm
Supported resolutions	480i,576i
※ Audio Output	
Quantity	1
Connector	3.5MM
Signal Standard	Analog audio
DVI Outputs	
Quantity	2 DVI
Connector	DVI-I DB15
Signal Standard	DVI DVI1.0
Resolutions	1024×768@60Hz 1280×720@60Hz 1280×1024@60Hz 1440×900@60Hz 1600×1200@60Hz 1680×1050@60Hz 1920×1280@60HZ
Whole machine	

N.W	3.0kg
Size mm	Case size LWH 253×440×56 Packing size LWH =515×110×355
Power Supply	100VAC – 240VAC 50/60Hz
Max power	18W
Temperature	0°C 45°C
Storage humidity	10% 90%

Processor

Documents / Resources

	Processor DB15 Special Effects Switching LED Video [pdf] Instruction Manual DB15 Special Effects Switching LED Video, DB15, Special Effects Switching LED Video, Effects Switching LED Video, Switching LED Video, LED Video, Video

References

- User Manual