LED Video Splicer & Processor

AMS-SC359

User Manual

LED Video Processor

Safety Instructions

⚠ This symbol prompts the user; the device user manual has important operating and maintenance instructions.

⚡ This symbol warns the user of the equipment inside the enclosure exposed to hazardous voltages, there is the risk of electric shock.

Note

Read the manual• Read and understand all safety and operating instructions before using the equipment.

Save the manual• the safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • this equipment should be operated only from the power source indicated on the product.

This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

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Contents

Introduction

This manual contains information about how to use, install and configuration the LED video splicing processor, in addition, also relates to knowledge LED video splicing processor and LED video systems. If Use the LED video splicing processor, please read this manual carefully.

About LED Video Splicing Processor

The LED splicing processor has three powerful video processing cores, multi-graphics multi-input smart splicing processor, which can be widely used in performing arts activities, command and control center, video conferencing, hotels, courts and conference rooms.

The LED splicing processor has 4-channel output, 3-channel for splicing, and 1 channel for monitoring. Can achieve 3* 1 or 1* 3 channel hybrid splicing, a single product support 7.95 million pixel user-defined output.

The LED splicing processor can accommodate a wide range of input sources, can access up to 13 video inputs, including 2 DVI, 3 HDMI, 4 AV, 3 VGA and 3G-SDI (optional). Each channel can accept standard resolution or high resolution video signals, the DVI and VGA can receive up to 1920 × 1200 @ 60Hz resolution input, to meet a variety of high-definition output.

The splicing processor is easy to use, using the key panel and menu system to complete the complex settings. RS-232 can be used for remote operation. A variety of input interfaces, to meet the different signal needs. Built-in 4 LED send card installation location to meet the installation requirements of large-screen system.

Panel

Rear panel

Video Input Connector:

- AV1,AV2, AV3, AV4 — Composite video input, BNC connector, support PAL、PAL-M/N、NTSC、SECAM.

- DVI1, DVI2 — DVI video input. DVI- I/DVI-D connector. support VESA standard video format.

- HDMI1, HDMI2, HDMI3 — HDMI video input. HDMI - A connector. Support HDMI1.3 / VESA standard.

- VGA1, VGA2, VGA3 — VGA video input. DB-15 connector. Support VESA standard video format.

- SDI, SDI-LOOP — SDI video input, loop out. BNC connector.

Video Output Connector:

- CH-A/B/C — DVI video output. DVI-I connector.

- CH-M/Monitor — DVI video output. DVI-I connector. Connect to monitor screen.

RS-232 — Serial communication connector for engineering testing, program burning, PC software control. Baud rate is 115200bps.

LED Sending Card Slot — Built-in 4 sending card slot.

AC Connector — Use IEC standard power cable，input 100-240 VAC, 50-60Hz.

AC Switcher — power on/off.

Control Connector — Net cable, USB input control.

Audio Connector — Audio output (L1 R1 GND L2 R2).

Front panel

LCD Display — displays the parameters and user settings.

Operating button — operate the menu system.

- **OK** "confirm"

- **ESC** "exit" or "back"

- **Knob** press down "OK", turn right "+" turn left "-" adjust the parameters on menu.

INPUTS — including 13 input signal selections, screen testing function, VGA auto correction.

- AV1, AV2, AV3, AV4 — video input selection button.

- VGA1, VGA2, VGA3 — VGA input selection / auto correction button. Keep press

 VGA1/2/3 button one more time could enable the auto correction function.

- DVI1, DVI2, HDMI1, HDMI2, HDMI3 SDI – DVI, HDMI, and SDI input selection button.

Indicator light function – the button light on when power on.

(1) Slow flicker：The interval is 1 second and keep flicker – no input signal.

(2) Fast flicker：The interval is 0.3 second – decoding the input signal.

(3) Light on：No flicker – input signal working.

FUNCTION — including display model, black output, preset, pip function and switch type.
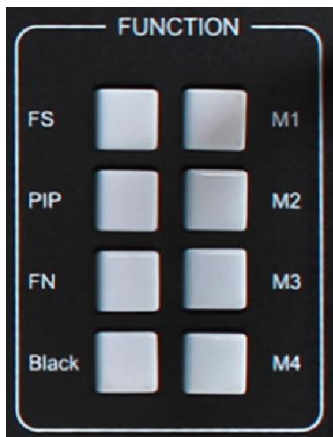
● **FS** – part screen display function, set the parameters in SPLICE menu.

● **PIP** – enable/disable the PIP function, set the parameters in PIP menu.

● **FN** –enable synchronously switch between CH-A/CH-C, use same input signal.

● **Black** – output black/freeze screen, select the output in the FUNC menu.

● **MODE** – load the user settings, support 4 group presetting.

Hint：When PIP function is working, PART/ FREEZE/BLACK/FADE are disabled.

Menu System

1. Default menu

OLED will display the input source, output resolution of each channel and other parameters when the processor startup.

```
--------------- Input Source -------------  | --- Function ----
  IN  M: HDMI1   1920x1080/60               |      Preset[1]
  IN  A: HDMI2   1920x1080/60               |
  IN  C: HDMI3   1920x1080/60               |   (50)    Fn
```
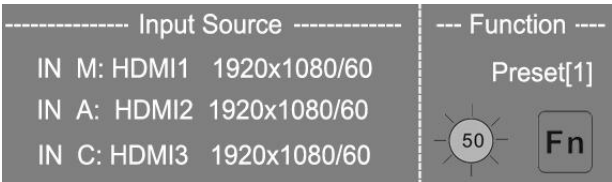
2. Main menu

Main menu display the option of every operation, all the functions could be set in the menu, press "OK" to enable the main menu when the processor is in default menu.

```
OUTPUT    SPLICE     LAYER
PICTURE   FUNCTION   SYSTEM
```
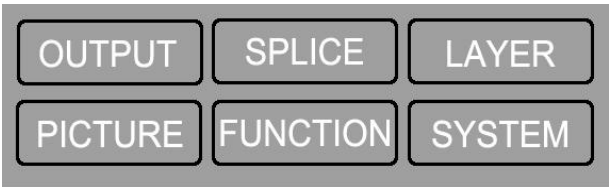
Option	Description
OUTPUT	Set output resolution for each channel
SPLICER	Set splicing parameters and part display, support equal/unequal splicing.
LAYER	Set PIP parameters etc.
PICTURE	Set the brightness, contrast, etc.
FUNCTION	Set language, user settings save and load
SYSTEM	Set system function, system version, factory reset etc.

Operation: press the "OK" button or Knob could enable the main menu, "ESC" is return button, turn

right or turn left the knob could adjust the parameters.

Configuration

1. Output Resolution

The default output resolution of the processor is 1920x1080/60Hz, user need to set the output

resolution according to the display; this is the first setup of using the processor.

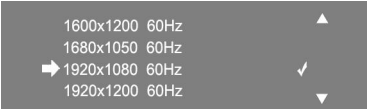**(1) Set output according to standard resolution:**

| OUTPUT | SPLICE | LAYER |
| PICTURE | FUNCTION | SYSTEM |

①

➡ Output MAIN >>>
Output A >>>
Output B >>>
Output C >>>

②

➡ Standard Resolution >>>
User Resolution >>>
Horizontal Width 1920
Vertical Height 1080 ▼

③

1600x1200 60Hz ▲
1680x1050 60Hz
➡ 1920x1080 60Hz ✓
1920x1200 60Hz ▼

④

(2)The processor also supports user-defined output resolution:

| OUTPUT | SPLICE | LAYER |
| PICTURE | FUNCTION | SYSTEM |

①

➡ Output MAIN >>>
Output A >>>
Output B >>>
Output C >>>

②

Standard Resolution >>>
➡ User Resolution >>>
Horizontal Width 1920
Vertical Height 1080 ▼

③

➡ Horizental Width 1024 ▲
Vertical Height 768
Frequency 60
Change >>> ▼
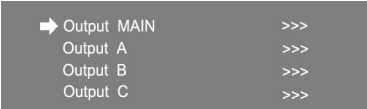
④

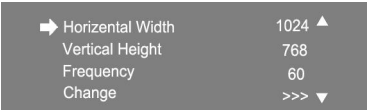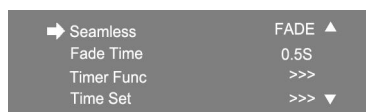> **Hints**：After the user resets the output resolution, the system will reset all the parameters of the splice menu to ensure the consistency of the data. The user-adjusted resolution can only be smaller than the currently selected resolution. The horizontal start value and the vertical start value cannot be adjusted when the resolution of the fine adjustment is equal to the currently selected resolution.

2. Switch Effect

The processor support seamless switch and fade-in/fade-out switch.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

➡ Seamless   FADE ▲
 Fade Time   0.5S
 Timer Func   >>>
 Time Set   >>> ▼
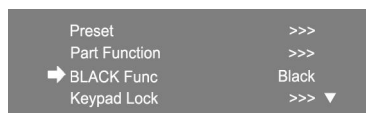
①   ②

3. Black And Freeze

The processor could output black screen and freeze the screen, this two functions use one button "BLACK" on the front panel, this shortcut key could be configured to "black" or "freeze".

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

 Preset   >>>
 Part Function   >>>
➡ BLACK Func   Black
 Keypad Lock   >>> ▼

①   ②
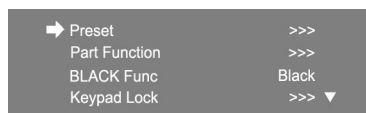
4. User Settings Save And Load

The user settings could be save in the processor to avoid reset when use same operation, the settings could be loaded from the processor easily. 4 groups are available for the user setting.

(1) Save Mode

This function could save all the parameters which configured by users.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

➡ Preset   >>>
 Part Function   >>>
 BLACK Func   Black
 Keypad Lock   >>> ▼

①   ②

Read Mode	>>>		➡ Preset[1]	☆
➡ Save Mode	>>>		Preset[2]	☆
Clear Mode	>>>		Preset[3]	☆
	▼		Preset[4]	☆ ▼

⑤   ④

There are 4 groups [1] ~ [4] in the sub menu, when the group is no data, it shows ☆, otherwise display

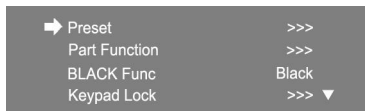★ The data could be overwrite by user.

(2) Load Mode

There are two different ways to load the user settings, use menu or shortcut key.

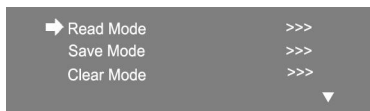   ① Shortcut key, press the "1" "2" "3" "4" button on the front panel

    ② Load from menu:

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

➡ Preset	>>>
Part Function	>>>
BLACK Func	Black
Keypad Lock	>>> ▼

①   ②

➡ Read Mode	>>>
Save Mode	>>>
Clear Mode	>>>
	▼

➡ Preset[1]	★
Preset[2]	★
Preset[3]	★
Preset[4]	★ ▼

③   ④
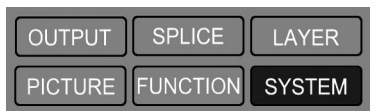
5. VGA Correction

The processor could correct the VGA input automatically including color, image size and position.

User also could correct the VGA input manually in two different ways.

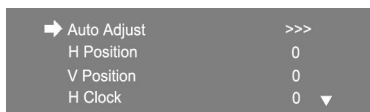   ① press "VGA/AUTO twice, the processor will correct the VGA video.

    ② Use the correction function in menu:

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

Language/语言	ENG
Device No.	1
PC Communication	On
➡ VGA Setting	>>> ▼

①   ②

➡ Auto Adjust	>>>
H Position	0
V Position	0
H Clock	0 ▼

➡ H Position	0
V Position	0
H Clock	0
Clock Phase	0 ▼

③auto   ③manually

> **Hint:** When the processor no VGA signal input, the function of correction is disabled, it will be better to set different output resolution when user VGA1, VGA2, VGA3 at same time.

6. Language

The processor support two languages Chinese and English, could be changed in menu:
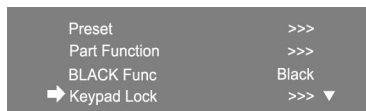
OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

➡ Language/语言	ENG
Device No.	1
PC Communication	On
VGA Setting	>>> ▼

①   ②

7. Lock the Button

The processor supports button lock to avoid miss operation. Lock in the menu:

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

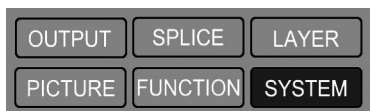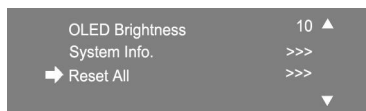| Preset	>>>
Part Function	>>>
BLACK Func	Black
➡ Keypad Lock	>>> ▼

①   ②

Keep press the "ESC" button 3 seconds to unlock the button.

8. Factory Reset

The processor support factory reset if the user parameters are wrong or misses operation, set in menu.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

OLED Brightness	10 ▲
System Info.	>>>
➡ Reset All	>>>
	▼

①   ②

9

> **Warning**: factory reset will delete all the user parameters, please be careful to use.

Application

The processor support large splicing output, the maximum width output resolution is 11520 pixels or maximum height is 4608. Support frame synchronization.

> **Hints**：Please make sure the output resolution of A, B and C is configured.

1. Multiple images

(1).three screen display three images.

Step: 1. Connect output CH-A to screen 1, CH-B to screen 2, CH-C to screen 3 by DVI cable.

2. Select input source for CH-A, CH-B, CH-C, for example HDMI1, VGA3, CV4.

3. Configure the output resolution in menu of led video processor.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

①

➡ Output MAIN	>>>
Output A	>>>
Output B	>>>
Output C	>>>

②

Standard Resolution	>>>
➡ User Resolution	>>>
Horizental Width	1920
Vertical Height	1080 ▼

③

Horizental Width	1080 ▲
Vertical Height	1152
Frequency	60
➡ Change	>>> ▼

④Output A

Horizental Width	1920 ▲
Vertical Height	1152
Frequency	60
➡ Change	>>> ▼

④Output B

Horizental Width	1080 ▲
Vertical Height	1152
Frequency	60
➡ Change	>>> ▼

④Output C

(2). three screen display one image.
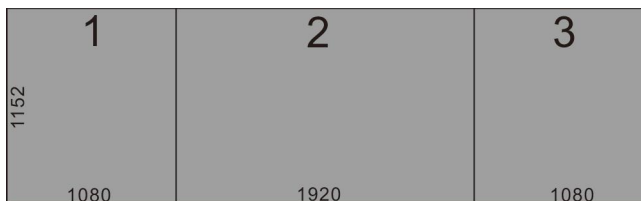
Step: 1. Connect output CH-A to screen 1, CH-B to screen 2, CH-C to screen 3 by DVI cable.

2. Select same input source for CH-A, CH-B, CH-C, for example HDMI1

3. Configure the output resolution in menu as the last example 1.

4. Configure the splicing parameters in menu.

| OUTPUT | SPLICE | LAYER |
| PICTURE | FUNCTION | SYSTEM |

①

Splice Wizards	>>>
V-Wall Sync	On
➡ Splice A	>>>
Splice B	>>> ▼

②

Splice	On
Pattern	Unequal
➡ Parameters	>>>

③

➡ Horizental Total	4080
Vertical Total	1152
Horizental Start	0
Vertical Start	0 ▼

④Splice A

➡ Horizental Total	4080
Vertical Total	1152
Horizental Start	1080
Vertical Start	0 ▼

➡ Horizental Total	4080
Vertical Total	1152
Horizental Start	3000
Vertical Start	0 ▼

11

④Splice B   ④Splice C

2. Part/Full display

Part/Full display is based on the splicing function, it could display part of screen for example the

user just need to display the red part as follow. Set the parameters in the menu then use the "PART"

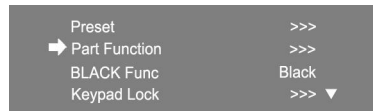button on the front panel to enable or disable this function.
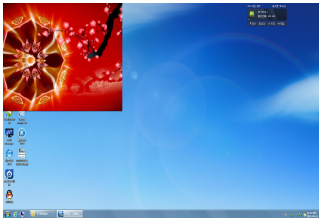
Full display   Part display

The parameters of part display area could be set automatically or configurable by user, when the

"Part Mode" is "Auto" the display area is unchangeable.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

①

Preset	>>>
➡ Part Function	>>>
BLACK Func	Black
Keypad Lock	>>> ▼

②

Part Function	On ▲
➡ Part Mode	User
Horizental Total	1694
Vertical Total	508 ▼

③

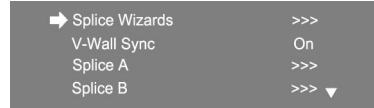| Horizental Total	1694 ▲
Vertical Total	508
➡ Horizental Start	0
Vertical Start	0 ▼

④

Splice Wizards
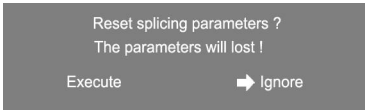
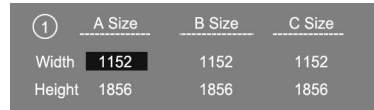The splice wizard is designed for the multiple screens splicing, make the setting easy for user.

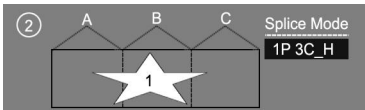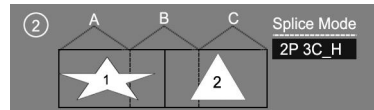| OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

①

➡ Splice Wizards	>>>
V-Wall Sync	On
Splice A	>>>
Splice B	>>> ▼

②

Reset splicing parameters ?
The parameters will lost !

Execute   ➡ Ignore

③

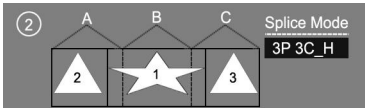| ①	A Size	B Size	C Size
Width	1152	1152	1152
Height	1856	1856	1856

④

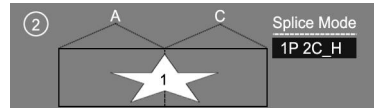⑤ there are 7 splice mode for selection to quickly set the parameters

No.1: 3 screen display one picture in horizontal

No.2: 3 screen display two pictures in horizontal

No.3: 3 screen display three pictures in horizontal

No.4: 2 screen display one picture in horizontal

No.5: 2 screen display three pictures in horizontal

No.6: 3 screen display one picture in vertical

No.7: 3 screen display two pictures in vertical

⑥ set the proportion of picture.

Two pictures

Three pictures

⑦

14

PIP function

1. Picture in Picture

Picture in picture could display two different input source in the same screen. That means in the normal displaying of the main input, inserted one or more compressed sub-screen in order to monitor other input. When working in picture-in-picture mode, the user needs to provide at least two signal input, and make appropriate settings for PIP. This function can also achieve the effect of POP, it is a special application of PIP.
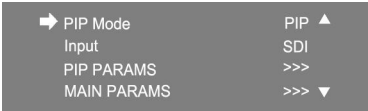
(1) PIP could be enabling on the front panel by press "PIP" button.

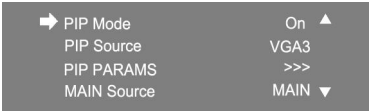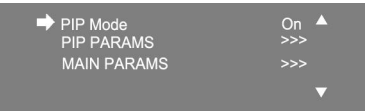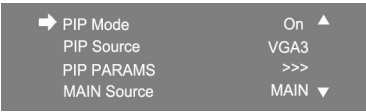(2) Set the PIP display size and position, PIP frame and transparency in menu.

OUTPUT	SPLICE	LAYER
PICTURE	FUNCTION	SYSTEM

①

➡ Output MAIN	>>>
Output A	>>>
Output B	>>>
Output C	>>>

②

➡ PIP Mode	PIP ▲
Input	SDI
PIP PARAMS	>>>
MAIN PARAMS	>>> ▼

Output MAIN

➡ PIP Mode	On ▲
PIP Source	VGA3
PIP PARAMS	>>>
MAIN Source	MAIN ▼

Output A

➡ PIP Mode	On ▲
PIP PARAMS	>>>
MAIN PARAMS	>>>
	▼

Output B

➡ PIP Mode	On ▲
PIP Source	VGA3
PIP PARAMS	>>>
MAIN Source	MAIN ▼

Output C

(3) The PIP function doesn't work between the same type signal, please check the following table which show the conflict.

		Main source										
		AV1	AV2	AV3	AV4	VGA1	VGA2	DVI1	DVI2	HDMI1	HDMI2	SDI
PIP	AV1	√	×	×	×	√	√	√	√	√	√	√
	AV2	×	√	×	×	√	√	√	√	√	√	√
	AV3	×	×	√	×	√	√	√	√	√	√	√
	AV4	×	×	×	√	√	√	√	√	√	√	√
	VGA1	√	√	√	√	√	×	√	√	√	√	√
	VGA2	√	√	√	√	×	√	√	√	√	√	√
	DVI1	√	√	√	√	√	√	√	×	×	×	√
	DVI2	√	√	√	√	√	√	×	√	×	×	√
	HDMI1	√	√	√	√	√	√	×	×	√	×	√
	HDMI2	√	√	√	√	√	√	×	×	×	√	√
	SDI	√	√	√	√	√	√	√	√	√	√	√

2. Keying Color Cutout

This function could cutout the red, green, blue, black and white color from input signal in order to

achieve some simple special effects processing and superimposed subtitles. For example as follow:
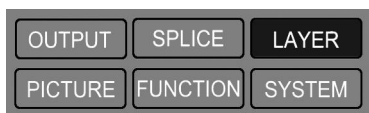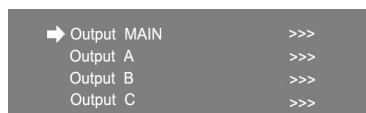

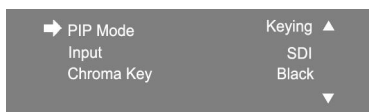PIP input   Main input   Output effects

①   ②

③