

# 4K Multi-Window Splicing Processor

LED Video Splicing & Processor  
Multi-window Splicer Processor

— English

## User Manual

### Multi-Window Splicing 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.

## Statement

This document is intended to help you understand and use the product. For accuracy and reliability, our company may make improvements and/or changes to this document at any time and without notice. Any problem in use or any good suggestion, please contact us through ways provided in the document. We will do our utmost to solve the problems and adopt the suggestions after evaluation as soon as possible.

## Copyright

Copyright © 2018 The splicing processor and the video processor manufacturers all rights reserved.

## Trademarks

VGA and XGA are registered trademarks of IBM Corporation.

VESA is a trademark of the Video Electronics Standards Association.

HDMI logo and High-Definition Multimedia Interface (High-Definition Multimedia Digital Interface) are HDMI Licensing LLC. Trademarks.

# Contents

1. Appearance .....	4
1.1 Front Panel .....	4
1.2 Rear Panel .....	6
2. Quick Splice Wizards .....	7
2.1 Enter The Splice Wizards .....	7
2.2 Regularity Splice Setting Steps .....	7
2.3 Free Splice Setting Steps .....	8
3. Menu System .....	9
3.1 Boot Menu .....	9
3.2 Main Menu .....	9
3.3 Sub--Menu .....	10
Output Setting .....	10
Window Setting / Input Setting .....	11
Image Crop .....	12
Image Quality / Mode Setting .....	13
Test Pattern / Audio Manager / Time&Task .....	14
Advanced Setting .....	15
Language .....	16
4. Basic Operation .....	17
4.1 Splicing Operation .....	17
4.2 Layer Setup .....	17

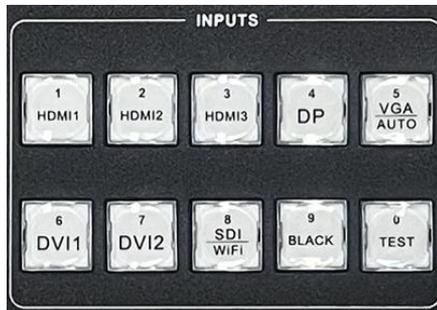
## Appearance

The 4K LED Multi-Windows Splicer Processor Panel Includes Front Panel And Rear Panel. The Devices With Different Configurations Will Be Different. The Following As Detailed Description.

### 1.1 Front Panel



- »» **LCD Screen** — Display the menu and parameters of configuration.
- »» **Operating button** — operate the menu system.
  - **OK:** "Confirm";
  - **ESC:** "Exit operation" or "Return";
  - **Knob:** Press down "OK", turn right "+" turn left "-" adjust the parameters on menu.
- »» **INPUT SOURCE** — **HDMI1**、**HDMI2**、**HDMI3**、**DP**、**VGA/AUTO**、**DVI1**、**DVI2**、**SDI/WiFi** ( Extension Required )、**BLACK**、**TEST**, Select the input source signal for current layer.

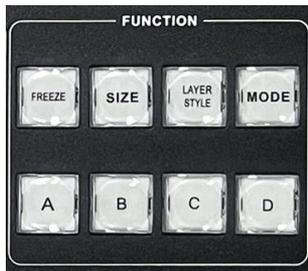


- **VGA AUTO:** Multiplexing key. When "VGA AUT" key is always on, Press the key again will to correct the VGA image.
- **SDI/WiFi:** Multiplexing key. When user selects to expand SDI, the key is will switch SDI Input; When user selects to expand WiFi, Press the key will switch to the wireless

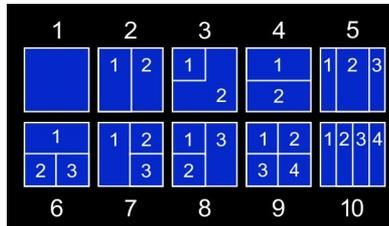
projection function. Only one of the two functions can be selected;

- **BLACK:** One key black screen button. When this button is selected, all current windows are black screen;
- **Test:** Test function button, open this function, the screen will display test pattern ,total of 11 test patterns;
- The indicator light keep flashing if the selected input no signal.
- The indicator light keep bright if the selected input is signaled.

## »» FUNCTION



- **FREEZE:** One key freeze screen button. When this button is selected, all current windows are freeze screen;
- **SIZE:** Set the size or position of the selected layer;
- **LAYER STYLE:** There are 10 styles for selection.as below:



- **MODE:** Recall the preset mode shortcut key. After entering the menu, rotate the corresponding preset template through the knob.
- **A、B、C、D:** 4 layers. After selecting one layer, can adjust the input signal or parameters of the layer.

## 1.2 Rear Panel



»» **Power Connector:** IEC standard power cable , input 100-240 VAC, 50 -60Hz.

### »» Input Connector

- DVI: DVI video input. DVI-I/DVI-D connector. support VESA standard video format.
- HDMI: HDMI video input. Support 3840x2160@30/60Hz,  
HDMI1 (HDMI2.0 standard), HDMI2&3(HDM1.4 standard).
- DP: DP video input. Support 3840x2160@60Hz
- VGA: VGA video input. DB-15 connector. support VESA standard video format.
- SDI: 3G-SDI video input, BNC connector (Expanding).
- USB: USB input (Expanding).
- WiFi: Wireless screen projection function (Expanding).

»» **Output:** Total of 4 channels are DVI1~DVI4, each channels has 2 DVI connectors of copy outputs.and each channel can output 2.65 million pixel resolution.

### »» Sending Card Installation Slot

- MS4K\_C Support built-in 4pcs standard sending cards

### »» Control Interface

- **RS-232:** Used to connect the PC control port, referring to the upper computer communication protocol
- **USB:** Used for upgrading internal programs of the machine; Or expand USB player input.
- **Network Interface:** The computer is connected to the machine through the network cable to realize the upper computer control.

»» **Audio:** 3.5mm audio input and audio output.

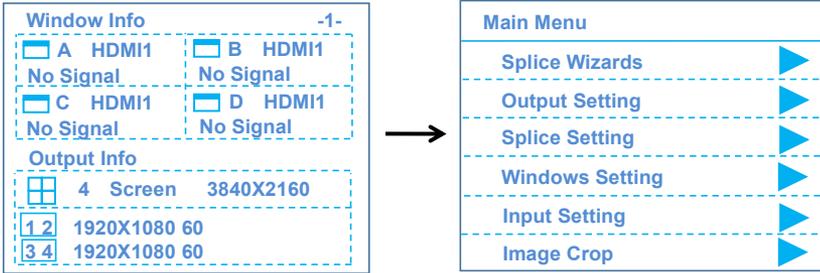
»» **WIFI Antenna:** Use for mobile phone and tablet to remote control the product.

»» **GND:** Used for external grounding to enhance anti-interference.

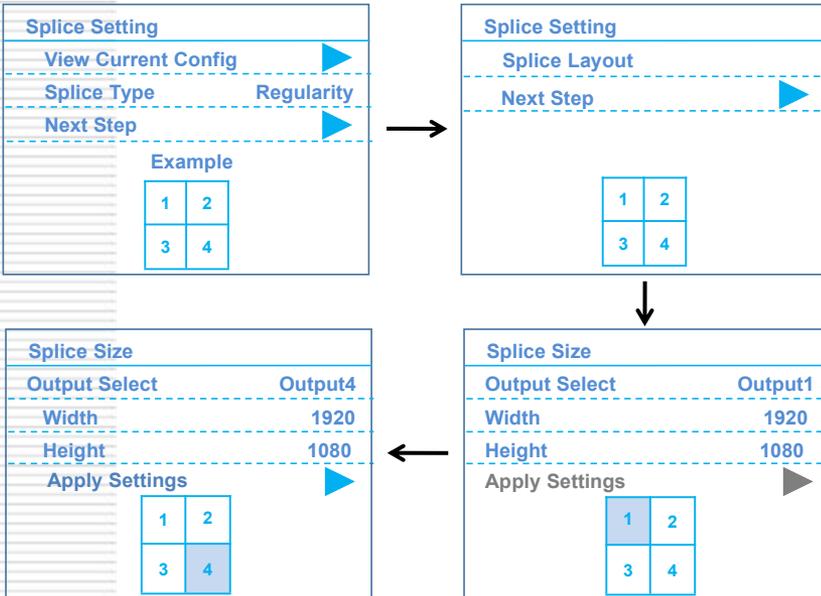
# Quick Splice Wizards

## 2.1 Enter The Splice Wizards

In The Power On State, Press "OK" Or "Knob" To Select "Splice Wizards" In The Main Menu.



## 2.2 Regularity Splice Setting Steps



- Splice Layout: 1x1, 2x1, 1x2, 1x3, 3x1, 1x4, 4x1, 2x2 ;
- In The Splice Size Interface, Set The Width&Height (Actual Control Pixel Of Each Output Port)

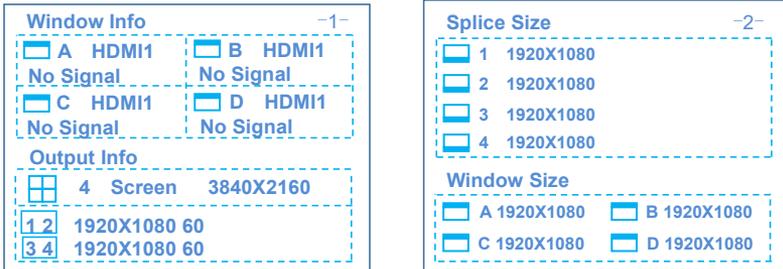
Of Output1, Output2, Output3, Output 4 Respectively. After Setting, Select (Apply Settings) And Click



# Menu System

## 3.1 Boot Menu

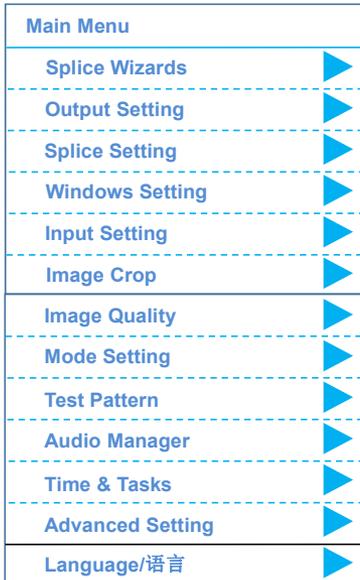
The Boot Menu is As Follow Picture, Press "ESC" Key Can Be Switched .



Boot Menu

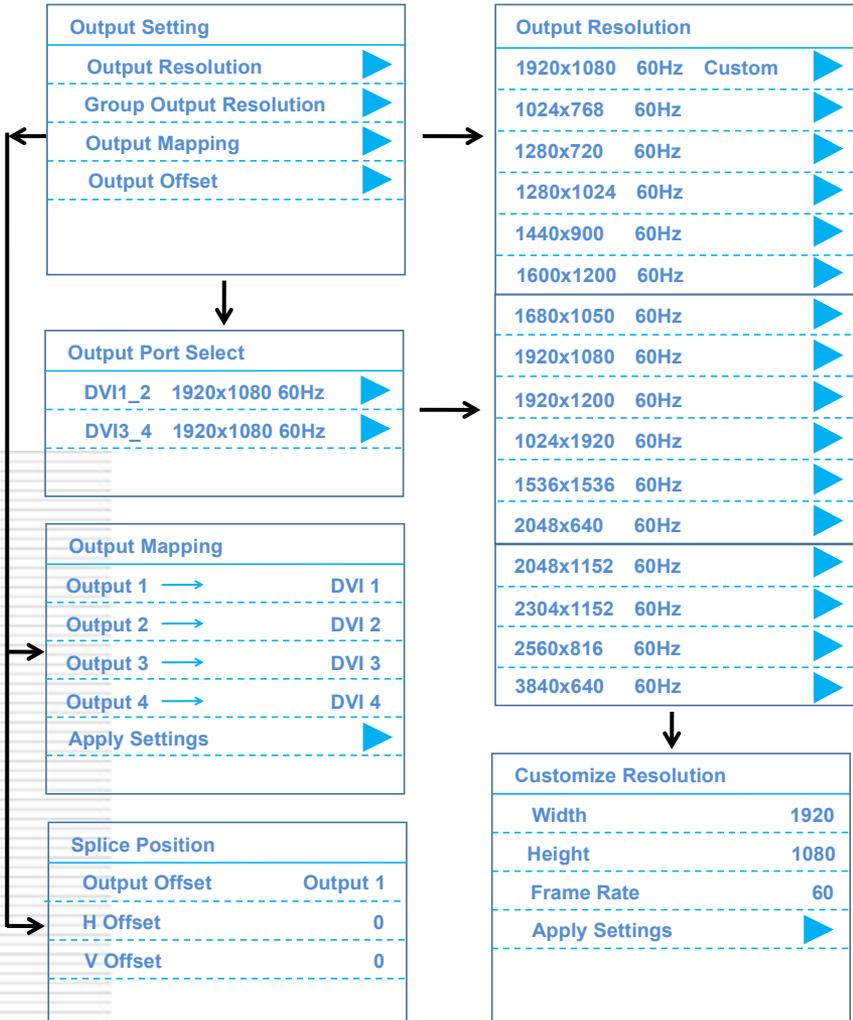
## 3.2 Main Menu

The LCD Screen Displays The Input Source And Resolution Information Of All Layers. Press The "OK" Key To Enter.



### 3.3 Sub-Menu

- **Output Setting** (Select "Output Setting" In Main Menu And Press "OK" To Enter The Interface Below );



- Note:** Output Resolution: If Change The Item, All Output Ports Will Be Set To The Same Resolution;  
 Grouping Output Resolution: The Output Ports 1&2 Or 3&4 Are Must Same Of The Resolutions;  
 Output Mapping: Map The Output Ports (1-4)To The Physical Interfaces (DVI1-4) According To

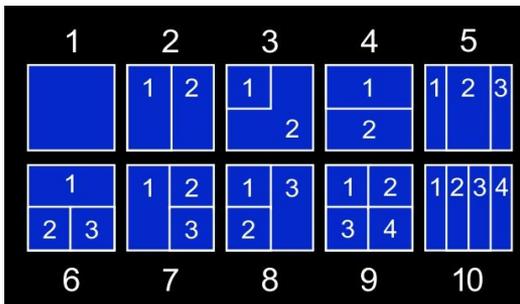
The Requirements, As Long As They Correspond One By One.

● **Window Setting**

(Select "Window Setting" In Main Menu And Press "OK" To Enter The Interface Below )

Windows Setting	
Windows Style	▶
Window Select	A
H Start	0
V Start	0
Width	3840
Height	2160
Image Rotate	OFF

Window Setting Menu



10-Windows Style

**Windows Style:** 10 Kinds Of Windows Preset, Which Can Be Directly Recall By Users;

**Window Select:** Window A,B,C,D Respectively Correspond To A,B,C,D Keys In The Function Area;

**Change Window Signal:** First Select The Corresponding Window (A, B, C, D), And Then Select The Corresponding Signal Source;

**Change Window Size:** First Select The Corresponding Window (A, B, C, D)+ "Size" Key.

**H Start:** Adjust The Horizontal Start Position Of The Corresponding Window;

**V Start:** Adjust The Vertical Start Position Of The Corresponding Window;

**Width:** Adjust The Horizontal Size Of The Corresponding Window;

**Height:** Adjust The Vertical Size Of The Corresponding Window;

**Image Rotate:** The Select Include: OFF, H-Flip, V-Flip, 90°, 180°,270° ; The User Selects B The Corresponding Options According To The Actual Requires;

● **Input Setting** (Select "Input Setting" In Main Menu And Press "OK" To Enter The Interface Below )

Input Setting	
EDID Setting	▶
DVI Audio Input	Analog
VGA Auto Adjust	▶
ADC Calibration	▶
HDMI12/DVI EQ	Auto
HDMI3 EQ	Auto



Input Setting	
Customize Resolution ▶	
3840x2160	60Hz
3840x2160	30Hz
2560x1600	60Hz
1920x1080	60Hz
1280x720	60Hz

Input Setting	
Input Select	All Inputs
Width	3840
Height	2160
Frame Rate	60
Apply Settings	▶
Reset	▶

(Open “ Input Custom Resolution ”  
Need Enter The Menu)

**EDID Setting:** Selected Input Signals (All Input, HDMI1/2/3, DVI1/2, DP) For EDID Setting;

**DVI Audio Input:** If The Input Signal With Audio, Select "Digital"; Otherwise, Select "Analog";

**VGA Auto Adjust:** Automatic Correction Of VGA Signal;

**ADC Calibration :** If the VGA image Have Color Deviation, Can Perform ADC Calibration;

● **Image Crop** (Select "Image Crop" In Main Menu And Press "OK" To Enter The Interface Below )

Image Crop	
Window Select	A
Crop Onoff	Off
H Start	0
V Start	0
Width	960
Height	540
Reset	▶
Reset All	▶

**Window Select:** Select To Crop The Current Window(A,B,C,D), And The Input Signal Selected In  
The Current Window Is Valid;

**Switch:** "On" or "Off", "On" Means To Open The Image Crop Function;

**H Start:** Corresponding To The Horizontal Start Position Of The Crop Signal;

**V Start:** Corresponding To The Vertical Start Position Of the Crop Signal;

**Width:** Corresponding To The Horizontal Size Of the Crop Signal;

**Height:** Corresponding To The Vertical Size Of the Crop Signal;

**Reset:** Reset The Parameters Of The Input Signal Selected In The Current Window;

**Reset All:** Reset The Parameters Of The Selected Input Signals In All Windows.

● **Image Quality** (Select "Image Quality" In Main Menu And Press "OK" To Enter The Interface Below )

Image Quality	
Brightness	50
Contrast	50
Sharpness	50
Saturation	50
Hue	50
Gamma	50
Color Temp	Standard ▶
Color Offset	▶
Clear Vision	Off
Additional Settings	▶
Reset	▶

Color Temp	
Color Temp	Standard
Red	50
Green	50
Blue	50

Color Offset	
Red Offset	0
Green Offset	0
Blue Offset	0

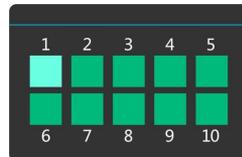
Additional Settings	
Color Gamut	Standard
In Color Range	Auto
In Color FMT	Auto
Win Color Range	Auto

**Image Quality:** Brightness, Contrast, Sharpness, Saturation, Hue, With An Interval Value Of 0-100;  
**Color Temp:** Standard, Cool, Warm, User; Can Be Adjusted According To User Requires;  
**Color Gamut:** Standard, SRGB, AdobeRGB1, BT709, DCI\_P3, BT2020, DICOM.

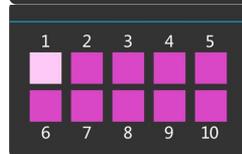
● **Mode Setting** (Select "Mode Setting" In Main Menu And Press "OK" To Enter The Interface Below )

Mode Setting	
Load Mode	▶
Save Mode	▶
Reset Mode	▶

Load Mode →



Save Mode →

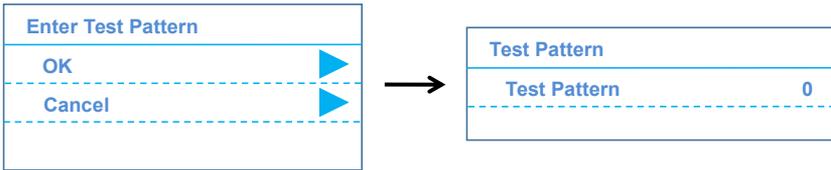


**Load Mode:** Enter The Load Interface And Press The "Number Key" To Load The Preset Mode;

**Save Mode:** Enter The Save Interface To save The Current Preset Mode;

**Reset Mode:** Clear The Preset Mode Saved By User.

● **Test Pattern** (Select "Test Pattern" In Main Menu And Press "OK" To Enter The Interface Below )



**Test Pattern:** Test Screen Without Input Of Signal Source, Test Pattern:0-10;

● **Audio Manager** (Select "Audio Manager" In Main Menu And Press "OK" To Enter Interface Below )

Audio Manager	
Volume	30
Mute	Off
Working Mode	Bind Win
Window	A

**Volume:** 0--30 Level;

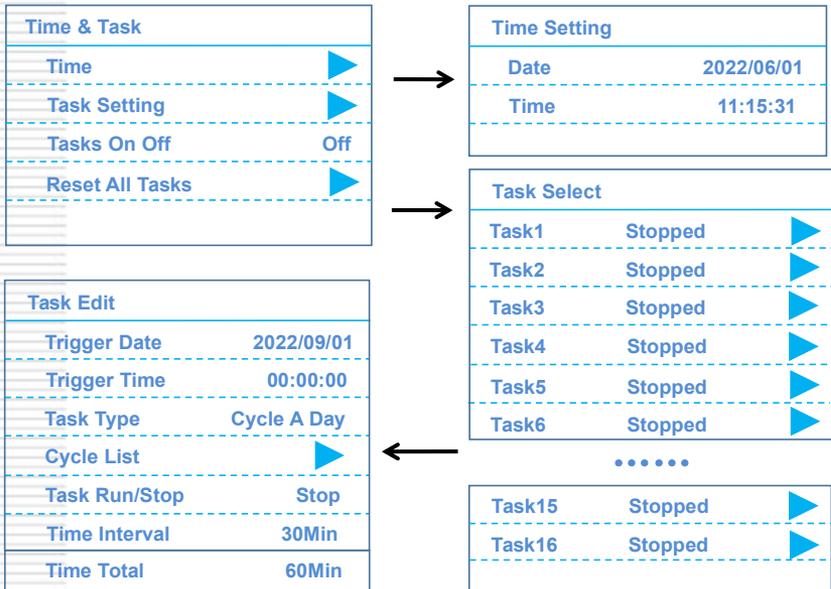
**Working Mode:** "Bind Win"&"Follow CHG";

"Bind Win": The Audio Output Switches With  
The Bound Window Signal;

"Follow CHG":The Audio Switches Following  
The Signal Switching;

**Window Select:** A, B, C, D;

● **Time&Task** (Select "Time&Task" In Main Menu And Press "OK" To Enter The Interface Below )



Cycle List →

**Note:**

If Want To Enable The Function,

Must Ensure The Main-Board Has Battery!

**Time Setting:** Set Time As The Current Time;

**Task Type:** Only Once,Every Day,  
Cycle A Day, Cycle Daily;

**Task Run/Stop:** "Run"&"Stop";

List Items Choice
Mode1
Mode2
Mode3
Mode4
Mode5
Mode6

.....

Mode9
Mode10

● **Advanced Setting**

(Select "Advanced Setting" In Main Menu And Press "OK" To Enter The Interface Below )

Advanced Setting
Network Config
System Info
Keypad Lock Off
Default Guide Params
Factory Reset
Additional Settings

Default Guide Params
Frame Rate 60
DVI Max Pixels 2460000
Reset

Network Config
Connect-Type Static IP
IP Address 192.168.1 .111
Subnet Mask 255.255.255.0

System Info
SW: AMS_MS4K_MCU_V1.32
FW0: AMS_MS4K_VP_V1.31
FW1: AMS_MS4K_VP_V1.31
FW2: AMS_MS4K_VP_V1.31

Additional Settings
Input Scaler Auto
Output Scaler Auto
Com Baud Rate 115200

**Keypad Lock:** If Opened The Function,  
The Front Panel Key Is Invalid; Can Be  
Unlocked According To The Prompt.

**Factory Reset:**

Reset To Factory Parameters;

- **Language** (Select "Language/语言" In Main Menu And Press "OK" To Enter The Interface Below )



**Languages Include:** English, Simplified Chinese, Traditional Chinese and Korean.

## Basic Operation

### 4.1 Splicing Operation

MS4K Supports 4 DVI Channel splicing(8 Standard Sending Cards);

MS16K Supports 8 DVI Channel splicing (16 Standard Sending Cards);

Select "Splice Wizards " Or "Splice Setting" In Main Menu And Press "OK", Advise To Use The "Splicing Wizard" To Quickly Complete The Splicing!

**First Step:** Set The Output Resolution ( Menu--Output Setting--Output Resolution )

This Resolution Is Set According To The One With The Highest Actual Resolution Among The 4 channels.The Best Way Is The Output 1, 2, 3,4 With The Same Resolution.

For Example::The Actual Output Resolution Is Output 1:1852x1216, Output2:1728x1216, Output3: 2048x1216, Output4: 1920x1216. The Resolution Should Be Set To 2048x1216, Or It Can Be Larger Than 2048x1216, As Long As It Does Not Exceed 2.6 Megapixel. After Setting, The Resolution Of Output 1~4 Is 2048x1216.

**Notes:** Output 1&2, 3&4, 5&6, 7&8 Are Group Output; The Output Resolution Of The Same Group Must Be Consistent!

**Second Step:** Set The Output Resolution ( Menu--Splice Wizards )

Select Splicing Type(Free) And Select Splicing Quantity;

Adjust The Horizontal Width And Vertical Height Controlled By Each Output;

Adjust The Horizontal Starting Position And Vertical Starting Position Of Each Output Port.

## 4.2. Layer Setup

The Multi-Windows Video Splicing Processor Has 4 Layers, And Each Layer Can Be Configured With Parameters Such As Input Source, Position, Size, Rotation mode, Layer layout. The Layers Button Is Arrayed On The Front Panel.



If The Layer Cannot Be Operated, Please Confirm Whether The Windows Style Is Correct.

### • Input Source

Press The Layer Indication Button On The Front Panel, Then Press The Input Indication Button Which Array In "INPUTS" Area On The Front Panel,For Example, Set The Input Of Layer B to DP1.



1. select layer

2. choose input source

**Note: When Window B Is Closed, Window B Cannot Be Selected, And The Signal Source Of Window B Cannot Be Selected. Other Windows Are Similar. If The Window Is Closed, Go To Window Settings And Select The Corresponding Windows Style Menu To Open It.**

### • Layer Style

Press The "Layer Style" Key Can Help Users Quickly Configure Layers. After Selecting The Corresponding Mode, Press The "Size" Key Can Adjust The Layer Position, Layer Size, Image Rotation etc. User Can Select A Similar Mode For Further Fine Adjustment.