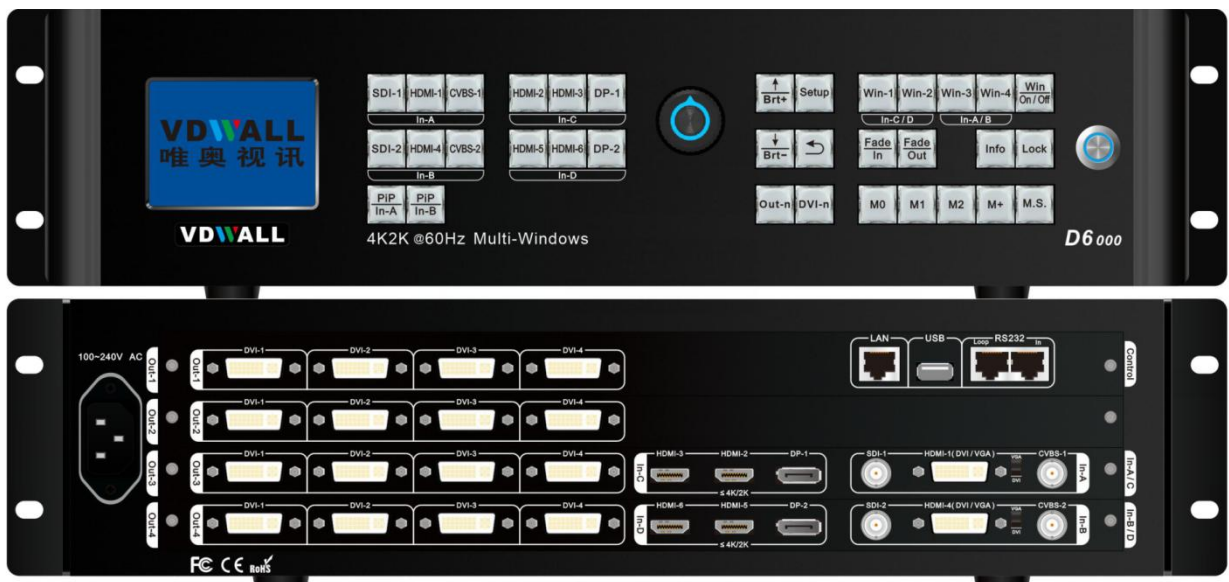


# D6000 Series

## 4K Multi-Win Mosaic Processor

### User Manual V1.0



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## Chapter 1: Safety Precaution



### Danger !

There is high voltage in the processor, to prevent any unexpected hazard, please do not open the cover of the device, unless you are a maintenance personnel.



### Warning !

- 1) This device shall not encounter water sprinkle or splash, please do not place anything containing water on this device.
- 2) To prevent fire, keep this device far from any fire source.
- 3) If this device gives out any strange noise, smoke or smell, please immediately unplug the power cord from receptacle, and contact local dealer.
- 4) Please do not plug or unplug DVI signal cable if the device is powered on.



### Caution !

- 1) Please thoroughly read this manual before using this device, and keep it safe.
- 2) In the event of lighting or when you are not going to use the device for a long time, please pull the power plug out of receptacle.
- 3) Nobody other than professional technicians can operate the device, unless they have been appropriately trained or under guidance of technicians.
- 4) To prevent equipment damage or electric shock, please don't fill anything in the vent of the device.
- 5) Do not place the device near any water source or anywhere damp.
- 6) Do not place the device near any radiator or anywhere under high temperature.
- 7) To prevent rupture or damage of power cords, please handle and keep them properly.
- 8) Please immediately unplug power cord and have the device repaired, when
  1. Liquid splashes to the device.
  2. The device is dropped down or cabinet is damaged.
  3. Obvious malpractice is found or performance degrades.

## Chapter 2: Accessory Package

Please unpack the product with care, and then check whether all the following items are included in the package. If anything is found missing, please contact the dealer.

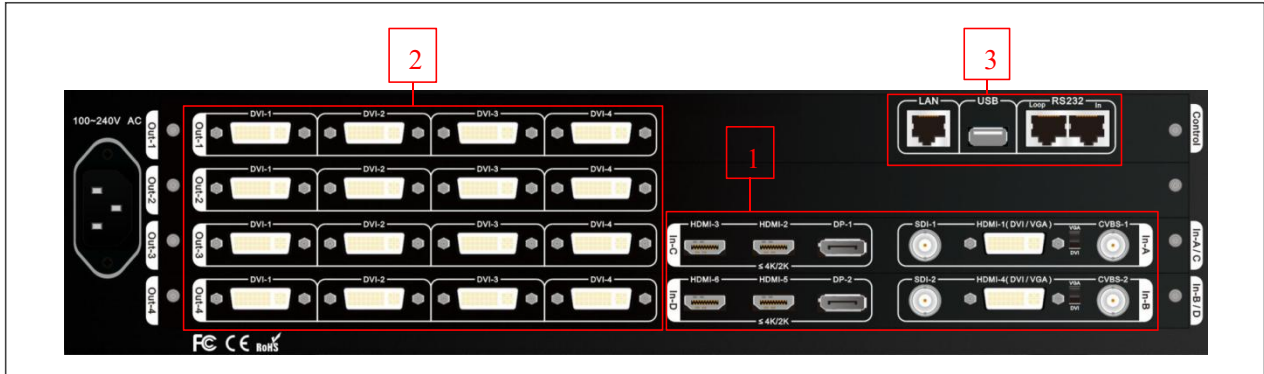
### Standard accessories

The accessories supplied with this product may differ from the following pictures, but they are applicable for the regions where you live (LED sending card is optional accessory)

		
<p>1.5m power cable</p>	<p>1.5m DVI cable+DVI to HDMI connector (In accordance with input card)</p>	<p>0.5m DVI cable (In accordance with DVI output port)</p>
		
<p>One 1.5m HDMI cable</p>	<p>One DVI-I to VGA connector</p>	<p>One 1.5m DP cable</p>
		
<p>Documentation disk</p>	<p>User manual</p>	<p>1.5m USB cable</p>

# Chapter 3: Physical Connection

## 3-1 Rear Panel Port Sketch



Picture 3-1: Rear panel port

- ① Signal input port
- ② Signal output port
- ③ Communication port

## 3-2 Rear Port Illustration

### 1. Signal input port

D6000 can build in 4 input cards utmost, identified as In-A, In-B, In-C, In-D. In-A and In-B are 2K input cards, In-C and In-D is 4K input.

Each 2K input card can access in 4 signals, detailed illustration as following table:

Ports	Description
<b>CVBS</b>	1 PAL/ NTSC composite analogue video
<b>HDMI(DVI/VGA)</b>	1 HDMI1.3 which is compatible with DVI and VGA input , switch different input by DIP switch beside the port
<b>SDI</b>	1X SDI digital signal

4K input card consists 3 input ports, refer to the following table:

Port	Description
<b>HDMI</b>	2 X HDMI 2.0 digital input
<b>DP</b>	1 X DP1.2 digital input

## 2. Signal output port

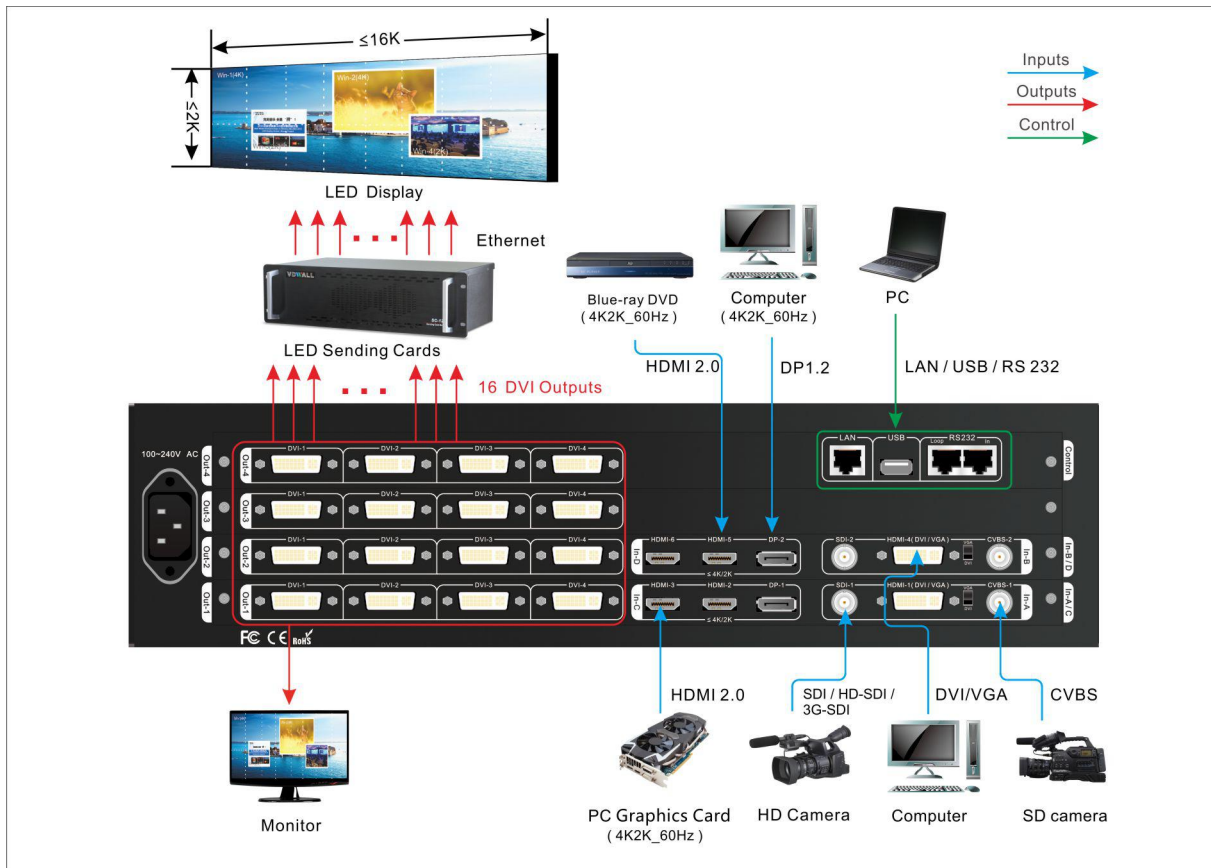
**D6000** can extend to 4 output cards, defined as Out-1、Out-2、Out-3 and Out-4. Each output card provides 4 DVI output ports

Port	Description
<b>DVI-1 ~ DVI-4</b>	4XDVI output port, connect to sending card or LCD screen

## 3. Communication port

Port	Description
<b>LAN</b>	TCP / IP ethernet control port
<b>USB</b>	USB control port
<b>RS232 In</b>	RS 232 control port, receive control command from PC COM port
<b>RS232 Out</b>	RS 232 command loop out, use for multiple devices control

### 3-3 Connection Schematic Diagram



Picture 3-2: Hardware connection

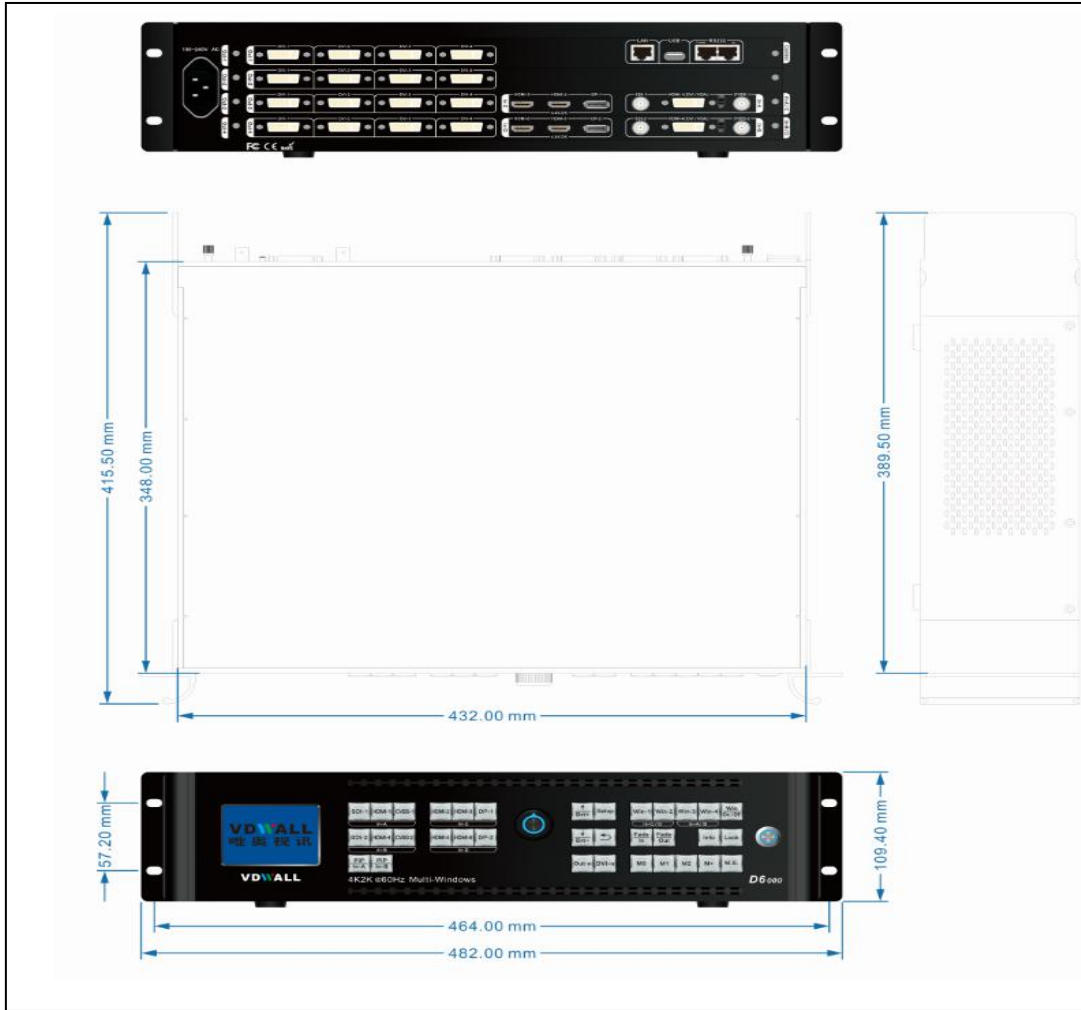
### 3-4 Technical Specification

Inputs		
Quantity / Type	4×HDMI 2.0 (VESA/CEA-861) 2×DP1.2 (VESA) 2×CVBS 2×DVI-I (VESA/CEA-861, support VGA/DVI/HDMI 1.3a) 2×SDI (SDI/HD-SDI/3G-SDI)	
Analogue Video	PAL/NTSC	
Video Amplitude/ Impedance	1V (p_p) / 75Ω	
VGA Format	PC (VESA)	≤1920×1200_60Hz
VGA Amplitude/ Impedance	R、G、B = 0.7 V (p_p) / 75Ω	
DVI /HDMI Format	PC (VESA)	≤1920×1200_60Hz
	HDMI1.3 (CEA-861)	≤1080p_60Hz
SDI Format	SMPTE259M-C	480i_60Hz
	SMPTE 292M	576i_50Hz
	SMPTE 274M/296M	720p、1080i、1080p
	SMPTE 424M/425M	
HDMI 2.0 (HDCP 2.2)	PC (VESA)	≤4096 x 2160_60Hz
	HDMI2.0 (CEA-861)	
DP1.2 (HDCP 2.2)	DisplayPort1.2 (VESA)	≤4096 x 2160_60Hz
Input Port	VGA: 24+5 DVI_I CVBS: BNC DVI: 24+5 DVI_I HDMI 2.0: HDMI (Type A) DP: DP port SDI: BNC/ 75Ω	
Outputs		
Quantity / Type	16×DVI	
DVI Format	2160X1160_50Hz、2048X1200_50Hz、1920X1200_50Hz、 1920X1080_50Hz、1680X1440_50Hz、1440X1680_50Hz、 1200X1960_50Hz、1200x1600_60Hz、1440x1440_60Hz、 1600x1344_60Hz、1920×1080_60Hz、2160x960_60Hz、 User defined resolution available	



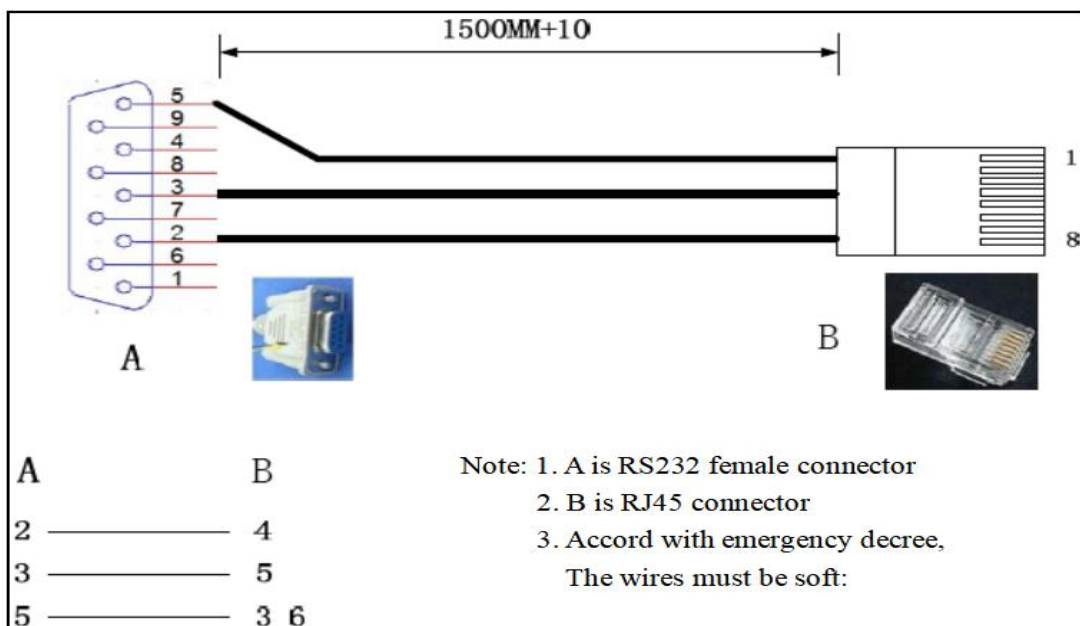
Output Port	DVI OUT: 24+1 DVI_D
Others	
Control Port	RS232/USB/LAN
AC Input Voltage	100-240VAC 50/60Hz
Power Consumption	110W
Ambient Temperature	0-45 °C
Ambient Humidity	15-85%
Dimension	482(L) x 415.5(W) x 109.4(H)mm
Package Dimension	510(L) x 552(W) x 198.4(H)mm
Weight	G.W: 11.4Kg, N.W: 8.0Kg

### 3-5 Installation Dimension



Picture 3-5a: Installation dimension

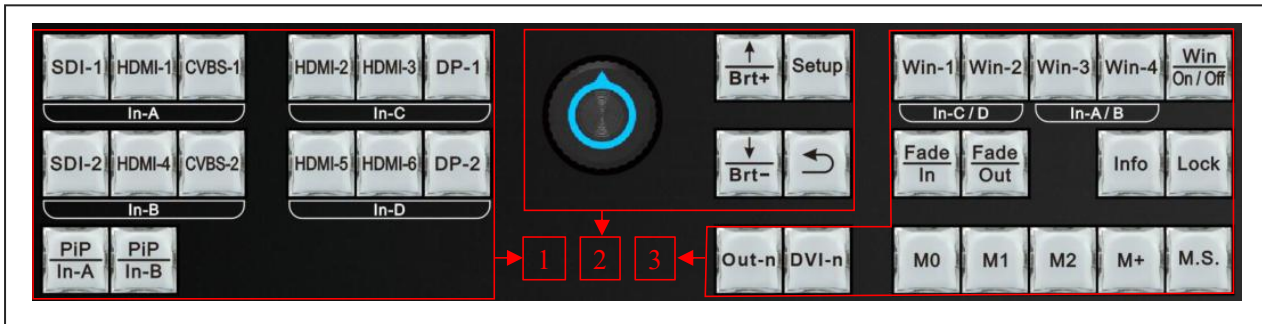
### RS232 wire order:



Picture 3-5b: RS232 cable wire order

# Chapter 4: Front Panel Button Illustration

## 4-1 Front Panel Button Sketch



Picture 4-1: Front panel button sketch

- ① Input card button
- ② Setup button
- ③ Other function button

### 1. Input signal selection button

Input signal selection button used to select signal source and open PIP, divided into 4 groups.

In-A input card button: **SDI-1**、**HDMI-1**、**CVBS-1**、**PIP/In-A**

In-B input card button: **SDI-2**、**HDMI-4**、**CVBS-2**、**PIP/In-B**

In-C input card button: **HDMI-2**、**HDMI-3**、**DP-1**

In-D input card button: **HDMI-5**、**HDMI-6**、**DP-2**

Note: press **HDMI** button continually to calibrate VGA signal, automatically fit screen.

### 2. Setup button

Configuration buttons: used to configure processor parameters

**Setup**: press to enter setup menu

**↑**、**↓**: up and down selection button

**Knob**: rotate **Knob** button adjust parameter value or select item

**OK**: press **Knob** / **OK** button, to save parameter

**↶**: back to previous menu

### 3. Output Card / Output Port selection button

Output Card and Output Ports selection button, used to select output DVI port

**Out-n**: in menu setup, press this button to switch output card.

**DVI-n**: in menu setup, press this button to switch DVI output port.

## 4. Multi-image function button

**Win-1**, **Win-2**, **Win-3**, **Win-4**: used to select target window.

**Win/OnOff**: used to turn on / off selected window. Red indicator light up if corresponding window lit up normally, indicator light off when close the selected window.




**Fade In**: under user operation state, press this button, button indicator on , then press Win1,Win2, Win3,Win4 to assign target window at bottom .

**Fade Out**: under user operation state, press this button, button indicator on , then press Win1,Win2, Win3,Win4 to assign target window on top .

## 5. Brightness adjustment button

**Brt+**, **Brt-** or **Knob**: brightness adjustment buttons, when device is in operation state, press this button directly to increase or decrease the output brightness level.

## 6. Information display button

Information display (**Info**): when device is in operation state, press **Info** button, processor LCD will display current configuration data and software info. Press  or  to turn page, press  button exit.

## 7. Display mode button

Multi-window display mode, from 0 to 15 total 16 preset modes. Mode 0, 1 and 2 can be directly recalled by pressing **M0**, **M1** or **M2** button, meanwhile the corresponding indicator will light up;

Mode 3 to 12 can be selected by pressing **M+** button, the indicator of **M+** will light up, then rotate **knob** to select target mode. Mode 13-15 is used for backup, can't be recalled directly;

**MS** is mode duplication button, can copy the parameters from source mode to destination mode. Each display mode saves 4 configuration items and corresponding value:

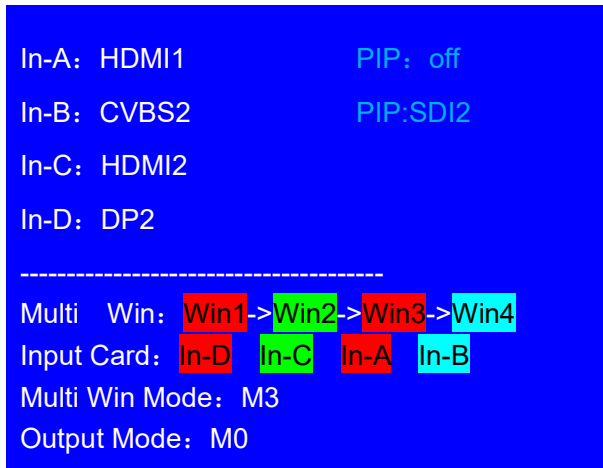
- A: image size and position ( including the input and output image )
- B: overlay order of multi-layer
- C: on-off status of window (Win On / Off status)
- D: signal source of each window

## 8. Lock button

Lock button (**Lock**): lock function. Press to activate front control button lock function, red indicator will light up, all buttons in front panel will be invalid except **Lock** itself. Press **Lock** button three times continually to unlock, the red indicator will light off.

## Chapter 5: User Basic Operation

After processor boot up, D6000 will automatically detect the quantity and configuration information of input and output card. Processor LCD display interface varies from different customized boards inserted. The following is standard display interface of full configuration (4 input boards, 4 output boards).



Picture 5-0: Operation default display interface

- The top 4 rows show input signal source, for instance, In-B is CVBS2, PIP input signal is SDI2;
- The fifth row "Multi Win: Win1->Win2->Win3->Win4" shows the overlay order from top to bottom;
- The sixth row shows signal source of each window;
- The seventh and eighth rows show Multi-Win mode and output card display mode;

User can operate input and output card in operation state:

- Input card operation includes input signal selection and PIP operation;
- Output card operation includes output card selection, output port selection, display mode selection, mode duplication and brightness adjustment;
- Multi-win operation includes output window on/off, overlay order operation, multi-window preset mode operation and mode duplication;

## 5-1 Input Card Operation

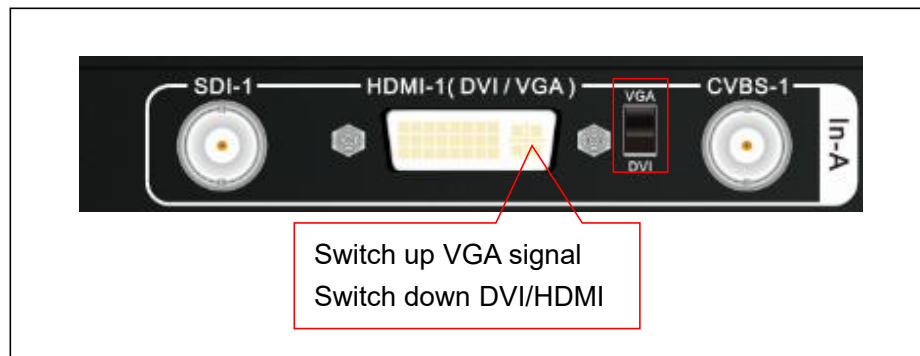
Under user operation state, input card operation includes: input card signal selection and PIP on/off.

### 1. Input card signal source selection

**Input card A:** when in PIP off state, press button **SDI-1**、**HDMI-1**、**CVBS-1** to select signal source;

**Input card B:** when in PIP off state, press button **SDI-2**、**HDMI-4**、**CVBS-2** to select signal source;

**Note:** HDMI-1 and HDMI-4 can access VGA signal, select VGA input or DVI/HDMI input by toggle switch beside the DVI port



Picture 5-1a: DVI-I switch

**Input card C:** press button **HDMI-2**、**HDMI-3**、**DP-1** to select signal source;


**Input card D:** press button **HDMI-5**、**HDMI-6**、**DP-2** to select signal source;

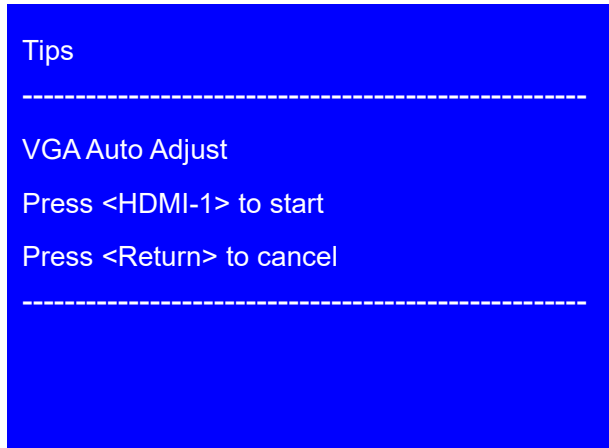
### 2. Input card PIP operation

**Input card A:** press button **PIP/In-A** to enter or exit PIP. When in PIP ready state, press button **SDI-1**、**HDMI-1**、**CVBS-1** to select sub image signal source;

**Input card B:** press button **PIP/In-B** to enter or exit PIP. When in PIP ready state, press button **SDI-2**、**HDMI-4**、**CVBS-2** to select sub image signal source;

### 3. VGA input signal automatic calibration

For input card In-A and In-B, on occasion input signal is VGA, press **HDMI-1** or **HDMI-4** button to enter VGA automatic calibration menu, press **HDMI-1** or **HDMI-4** button again to automatically calibrate VGA signal. May need press several times to perfectly fit screen. Press  to exit menu.



Picture 5-1b: VGA automatic calibration

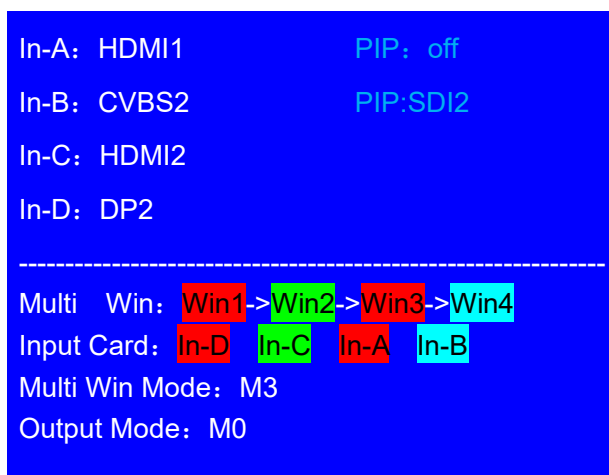
## 5-2 Output Card Operation

Under user operation state, output card operation includes: output card display mode selection, output brightness adjustment.

### 1. Output card display mode recall and mode duplication

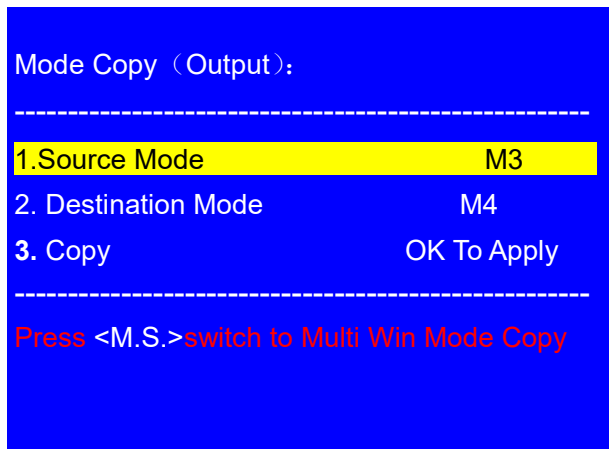
D6000 multi-window display mode has 16 presets(M0-M15), select M0 ~ M12 by pressing mode button, M13 ~ M15 are backup modes, can't be recalled directly.

Output mode operation procedure: under user operation state, rotate **Knob** button to select output mode, press **OK** button to confirm and apply the output mode.



Picture 5-2a: Output mode switching

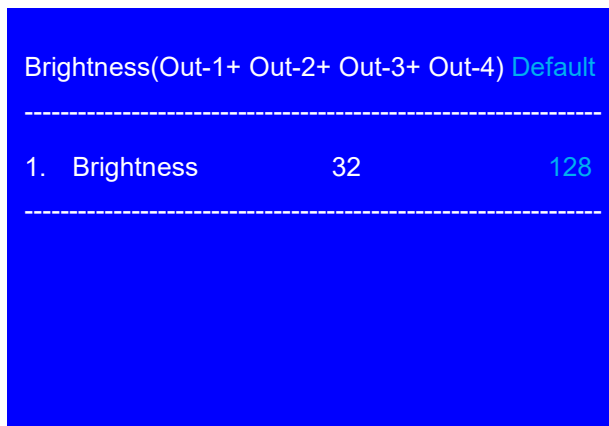
**M.S.** button operation procedure: under user operation state, press **M.S.** button to enter mode duplication menu, select **Source Mode** and **Destination Mode**, on **3.Copy** menu, press **OK** button, then output parameters of **Source Mode** will be copied to **Destination Mode**.



Picture 5-2b: Output mode duplication

## 2. Output card brightness setup

Output card brightness adjustment ranges from 0 – 255, “0” represents the minimum brightness level, press **Brt+** button to increase, and press **Brt-** button to decrease, or rotate **Knob** button to adjust value. In order to guarantee sufficient grayscale, the default brightness value is 128.



Picture 5-2c: Output brightness setup



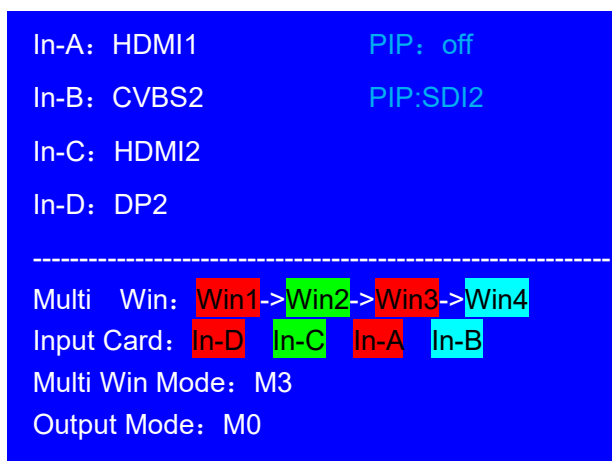
## 5-3 Multi-Window Operation

Multi-window operation mainly includes: output window on/off, overlay order operation, multi-window preset mode operation and other related operations.

### 1. Output window on/off and overlay order operation

**Output window on/off** : under operation state, select target window by pressing (**Win-1**、**Win-2**、**Win-3**、**Win-4**) , then press **Win/OnOff** button to open or close selected window , **Win/OnOff** indicator light up means display current window, indicator light off means close current window.

**Multi-window overlay order operation**: under operation state, press **Fade In**、**Fade Out** button to select switching effect, then press (**Win-1**、**Win-2**、**Win-3**、**Win-4**) to assign the target window at bottom or on top.

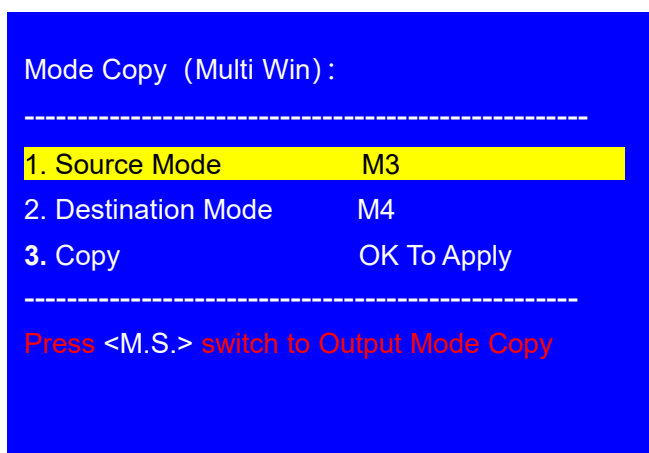


Picture 5-3a: Output card mode switch

## 2. Multi-window display mode operation

There are 16 preset multi-window display modes, M0 ~ M15, among which M0 ~ M12 is available for direct recall , M13 ~ M15 is used for backup (cannot be recalled directly). M0 ~ M2 can be recalled directly by pressing **M0**、**M1**、**M2** button, the button indicator will light up after being selected; M3 ~M12 can be selected by pressing **M+** button into mode selection menu, rotate **Knob** button to select target mode, then press **OK** button to confirm and apply, the **M+** button will light up when recall M3 ~M12 .

Multi-window mode duplication: under user operation state, press **M.S.** button into mode duplication menu, select **Source Mode** and copy to **Destination Mode**, then on **3.Copy** menu, press **OK** button to confirm and apply, thus the parameters in source mode will be copied to destination mode.



Picture 5-3b: Multi-window mode duplication

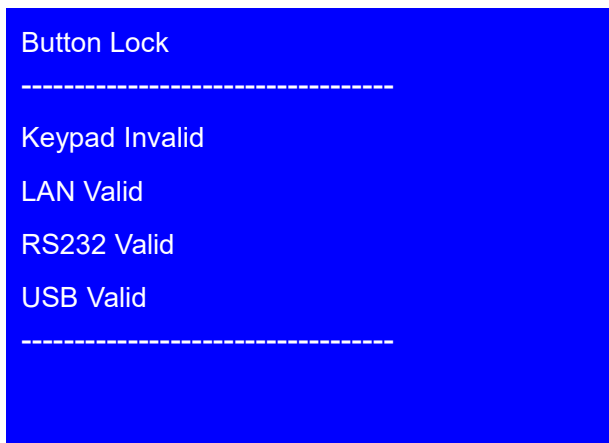
## 5-4 Other Functions Operation

Except above operations, there are lock button operation, system Info function and other related operations.

### 1.Lock button operation

Under operation state, press **Lock** button to activate function, other buttons will be invalid, only LAN, RS232, USB control is active, thus to prevent remote control and front panel control conflict. D6000 shall automatically enter key lock state once receiving remote control instructions.

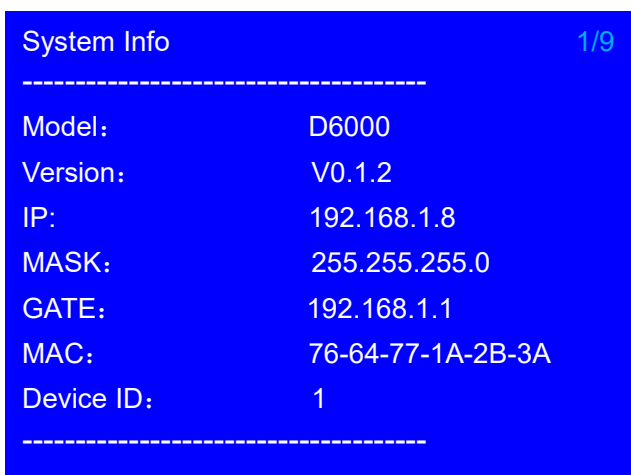
Under lock state, press **Lock** button three times repeatedly to unlock.



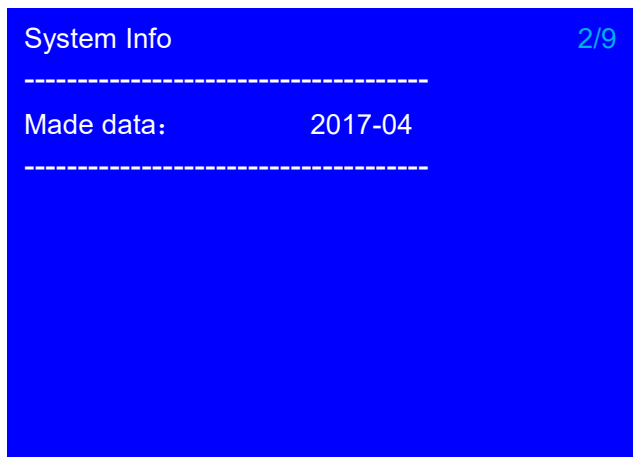
Picture 5-4a: Button lock

### 2. Check system information (**Info**)

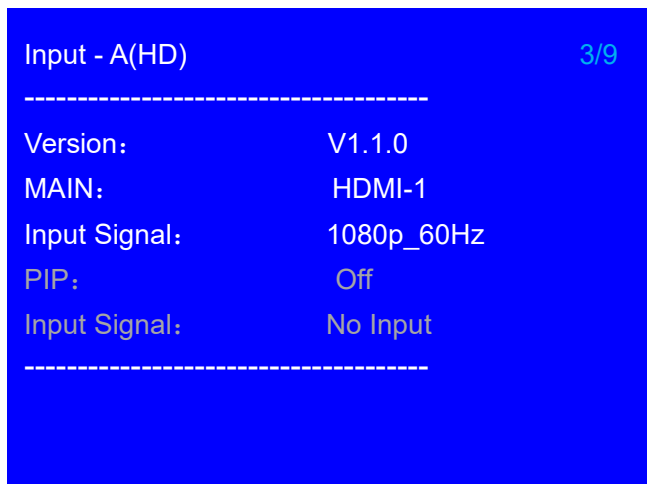
Press **Info** button into System Info menu. Press **Up/Down** button turning page, press **Back** to exit. System Info menu as following.



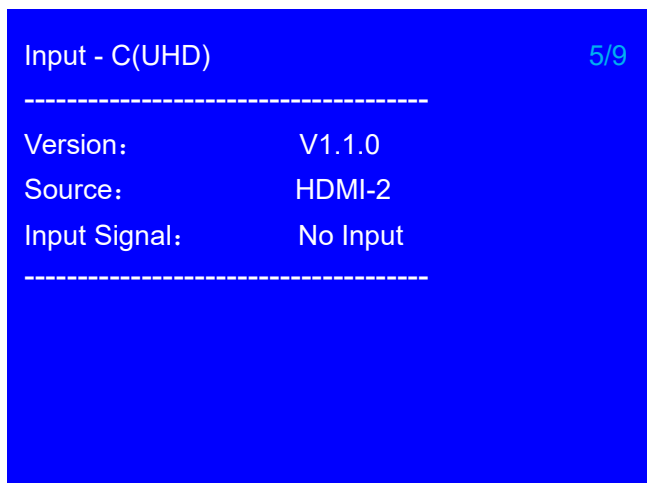
Picture 5-4b: System info



Picture 5-4c: System info



Picture 5-4d: System info



Picture 5-4e: System info

```
Multi Win–Win2                                     7/9
-----
Version:          V1.1.3
Win2:            In-C
-----
```

Picture 5-4f: System info

```
Output - 1                                         8/9
-----
Version:          V1.1.3
Resolution:       1920x1080_60Hz
-----
```

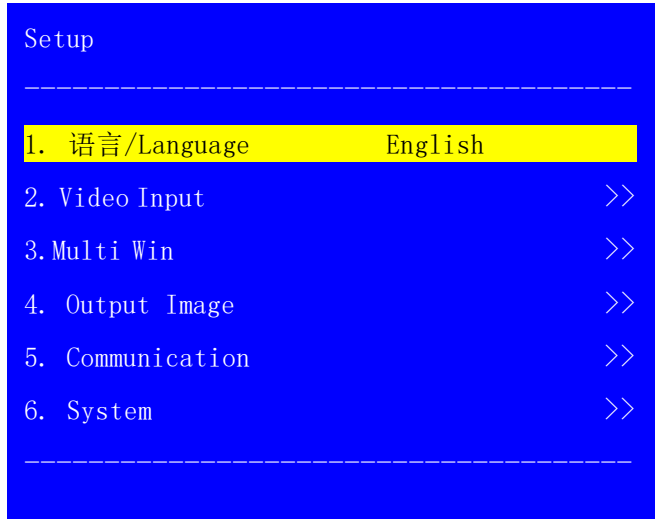
Picture 5-4g: System info

```
System Random Checksum                             9/9
-----
In-A:  AF8F0E8E0D8D0C8  AF8F0E8E0D8D0C8
In-B:  BF8F0E8E0D8D0C8  CF8F0E8E0D8D0C8
M.Win: MF8F0E8E0D8D0C8  MF8F0E8E0D8D0C8
Out-1: 1F8F0E8E0D8D0C8  1F8F0E8E0D8D0C8
Out-2: 2F8F0E8E0D8D0C8  2F8F0E8E0D8D0C8
Out-3: 1F8F0E8E0D8D0C8  3F8F0E8E0D8D0C8
Out-4: 2F8F0E8E0D8D0C8  4F8F0E8E0D8D0C8
```




Picture 5-4h System info

## Chapter 6: User Setup Menu

The user setup menu consists 6 main parts, including language setup, video input setup, multi-window setup, output image setup, communication setup and system setup.

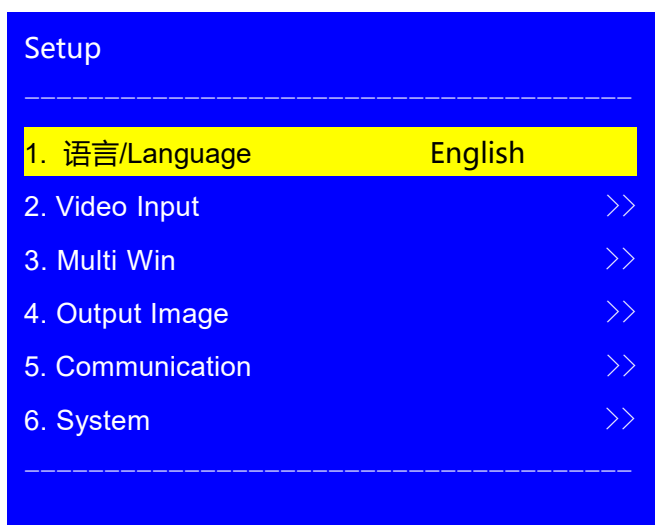


Picture 6: User setup interface

After device boot up, press **Setup** button into user setup menu, press  button to select menu item, press  button (**OK** button) into menu, press  button return to previous menu. Description as following:

### 6-1 Language Setup

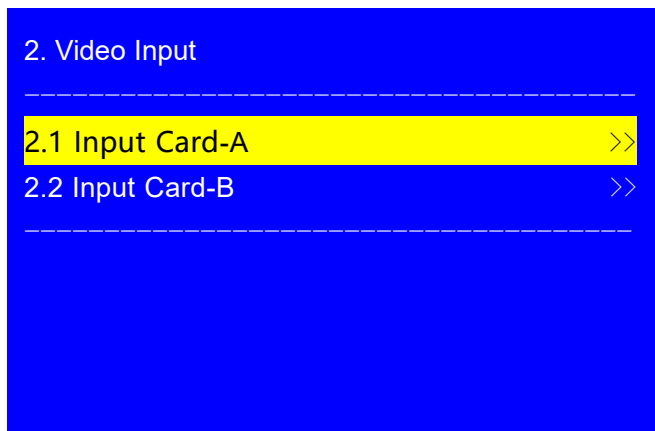
After system boot up, press **Setup** into user setup menu, first item **1.语言/Language**, under this menu rotate **Knob** button to switch language, press **OK** button to confirm and apply.



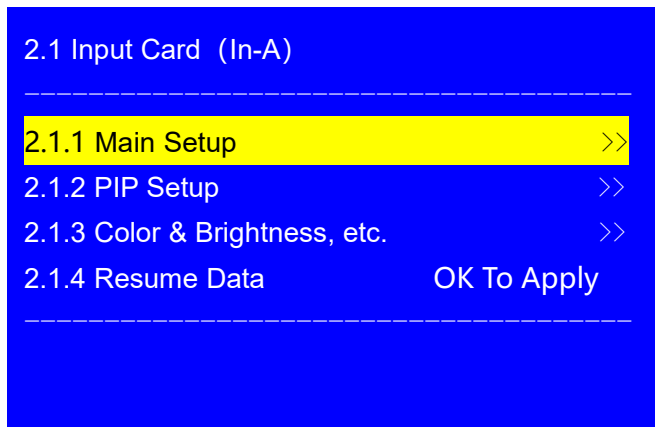
Picture 6-1 User menu interface

## 6-2 Video Input Setup

After system boot up, press **Setup** into user setup menu, select **2.Video Input** by pressing **↑/↓** button, press **OK** button into this menu, this menu is used to set the parameters of Input Card-A and Input Card-B.






Picture 6-2a: Video input setup

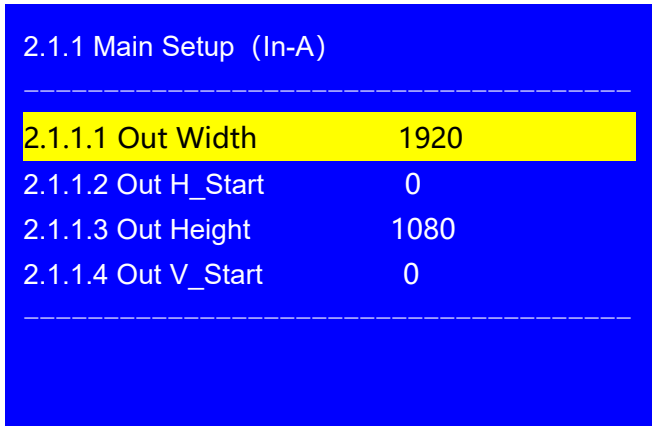


Picture 6-2b: Input card setup

## 1. PIP setup

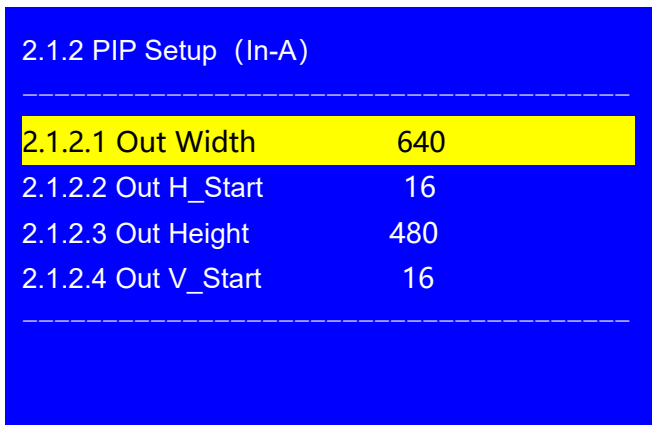
2.1.1 Main Setup and 2.1.2 PIP Setup menu is used to configure main image and sub image size and position.

Under this menu, press  button to select the item, rotate  button to adjust parameter, press  button to confirm and apply.



2.1.1 Main Setup (In-A)	
2.1.1.1 Out Width	1920
2.1.1.2 Out H_Start	0
2.1.1.3 Out Height	1080
2.1.1.4 Out V_Start	0

Picture 6-2c: Main setup



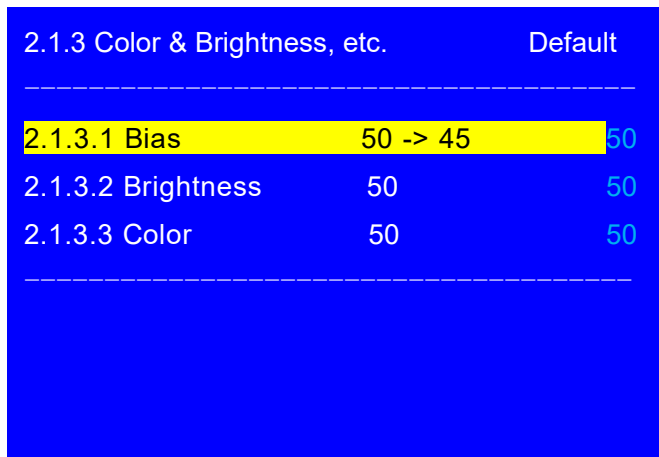
2.1.2 PIP Setup (In-A)	
2.1.2.1 Out Width	640
2.1.2.2 Out H_Start	16
2.1.2.3 Out Height	480
2.1.2.4 Out V_Start	16

Picture 6-2d: PIP setup



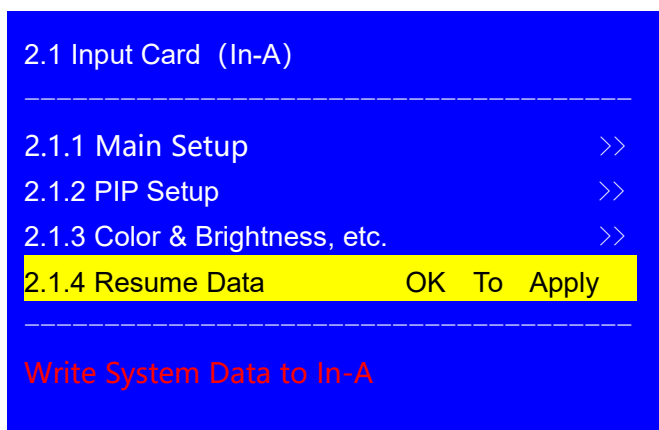
## 2. Color & Brightness,etc.

2.1.3 Color & Brightness,etc. menu is used to set the bias , brightness and color parameters of the input signal. Press  $\uparrow, \downarrow$  button to select the item, then rotate **Knob** button to adjust current value, press **OK** button to confirm and apply.



Picture 6-2e: Color & Brightness,etc. setup

## 3. Resume data setup



Picture 6-2f: Input card resume data setup

2.1.4 Resume Data function is used to restore system data to the input card, it is generally used after replacing input card. Press  $\uparrow, \downarrow$  button to select the Resume Data menu, press **OK** to select, then press **OK** again to confirm Resume Data, thus the processor will restore data to the current input card.

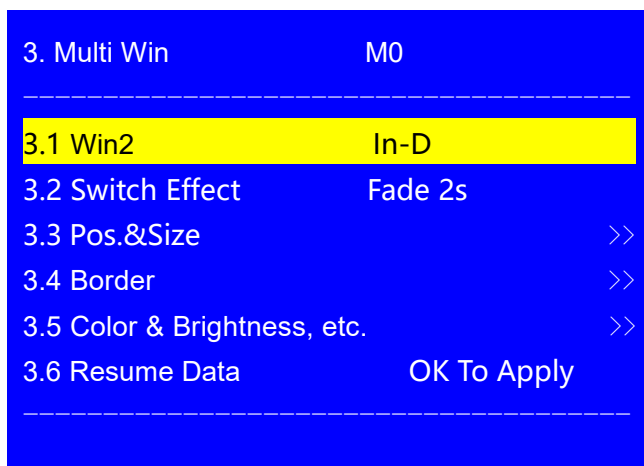
## 6-3 Multi-Window Setup

Press **Setup** button into user setup menu, press **↑,↓** button to select **3.Multi Win**, press **OK** button into this menu. Under this menu, user can configure multi-window parameters.



Picture 6-3a: Multi Win setup menu

### 1.Multi-window matrix setup



Picture 6-3b: Window source setup

**3.1 Win** menu is used to select signal source of multi-window. Win-1 and Win-2 source from In-C or In-D. Win-3 and Win-4 select signal from In-A or In- B.

**Setup procedure:** Press **Setup** into the menu, press the display mode button (such as **M0**, **M1**, etc.) to select the preset mode, press window button (**Win-1**, **Win-2**, **Win-3**, **Win-4**) to select target window. Rotate **Knob** button to switch source input card.

## 2.Switch effect setting



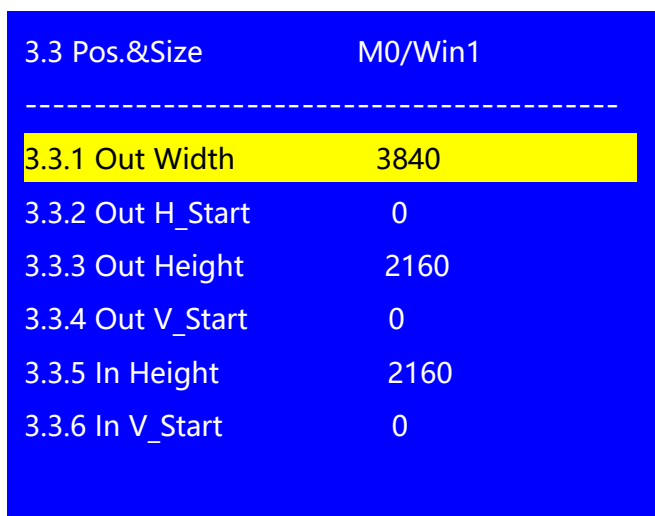
Picture 6-3b: Switch effect setup

**3.2 Switch Effect** menu is used to set the transition effect during layer order adjustment, including Seamless switching and Fade In/ Fade Out switching, Fade in/Fade out switching duration time: 1s,2s,3s available .

**Setup procedure:** Press **Setup** enter the menu, rotate the **Knob** button to select switch effect , press **OK** to save and apply.

## 3.Size and position setup

Press **Setup** button to enter **3. Multi Win** menu, press the **↓** key to select the **3.3 Pos.&Size** , then press the **Knob** key (**OK**) into the menu.



Picture 6-3c Size and position setup

**Setup procedure:** press display mode button (such as **M0**, **M1**, etc.) to select the display mode, press **Setup** button into setup menu, press (**Win-1**, **Win-2**, **Win-3**, **Win-4**) to select target window, rotate **Knob** to adjust parameter value, then press **OK** to save and apply.

**Note:** After selecting the target window, use **Fade Out** function, dispose target window on top, thus facilitate size and position adjustment .

## 4.Border setup

3.4 Border menu is used to configure the color and thickness of image frame. Press window button (**Win-1**, **Win-2**, **Win-3**, **Win-4**) to select the target window, press **↑,↓** key to select 3.4 Border menu, rotate **Knob** for value adjustment, then press **OK** button to save and apply.

3.4 Border	Win1
-----	
3.4.1 Border	ON
3.4.2 Border R	128
3.4.3 Border G	128
3.4.4 Border B	128
3.4.5 Border Size	4

Picture 6-3d Image border setup

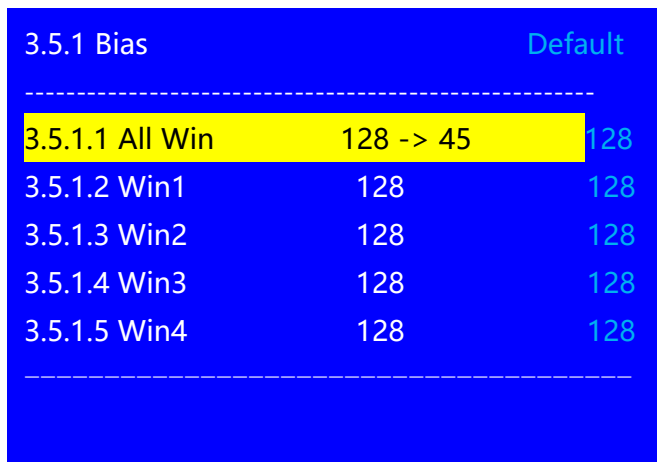
## 5.Image quality setup

Enter 3. Multi Win menu, press **↓** button to select 3.5 Color & Brightness, etc., press **OK** into menu. User can set bias, brightness and color parameters of each window in this menu.

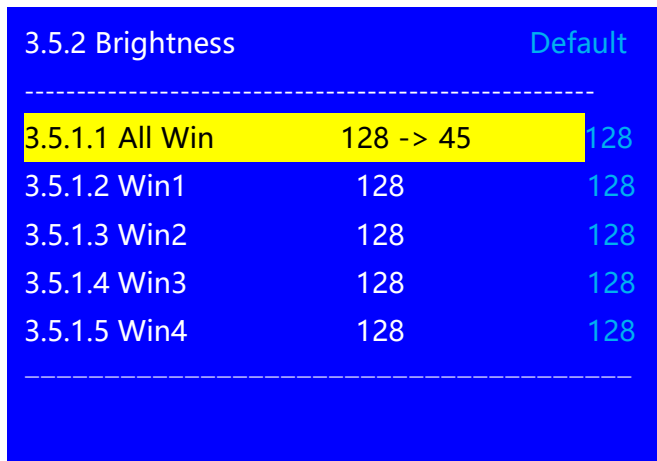
**Setup procedure:** Enter 3.5 Color & Brightness, etc. menu, press **↑,↓** button to select the item, rotate **Knob** to adjust parameter value, then press **OK** to save and apply.



Picture 6-3e: Image quality setting



Picture 6-3f: Bias setting



Picture 6-3g: Brightness setting

3.5.3 Color		Default
3.5.3.1 All Win	128 -> 45	128
3.5.3.2 Win1	128	128
3.5.3.3 Win2	128	128
3.5.3.4 Win3	128	128
3.5.3.5 Win4	128	128

Picture6-3h: Color setting

## 6.Data restore

3. Multi Win	M0
3.1 Win2	In-D
3.2 Switch Effect	Fade in/out
3.3 Pos.&Size	>>
3.4 Border	>>
3.5 Color & Brightness,etc.	>>
3.6 Resume Data	OK To Apply

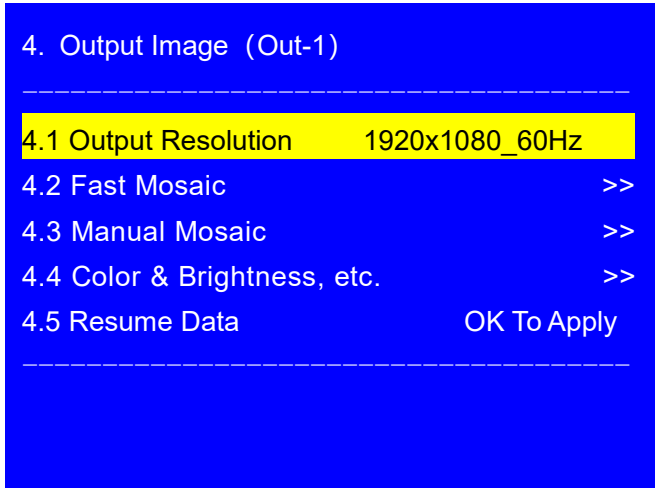
Write System Data To Multi Win Card

Picture 6-3i: Multi-window data restore

**3.6 Resume Data** menu is used to restore system data to the corresponding multi-window card, which is generally used after replacing the multi-window card. Press **↑**,**↓** to select the **3.6 Resume Data** menu, press **OK** to select, press **OK** again to confirm and apply as prompt .

## 6-4 Output Image Setup

After processor boot up, press **Setup** button into menu. Press **↑,↓** button to select **4. Output Image**, press **OK** button into the following menu. This menu is used to adjust output image of D6000.



Picture 6-4a: Output image setup

### 1. Output resolution setup



Picture 6-4b: Output resolution setup

**4.1 Output Resolution** menu is used to set DVI output image resolution. Under this menu, rotate **Knob** button to switch resolution, press **OK** to apply, press **OK** again to confirm and reboot processor automatically. The new output resolution will be activated after reboot.

Not only the preset output resolutions, A6000 series also support user defined output resolution.

**Custom Resolution setup:** select **4.1 Custom Resolution** , press **OK** into the menu, set **4.1.1 Custom Width** and **4.1.2 Custom Height** parameters, then select **4.1.3 Press OK to apply**, double press **OK** button to apply custom resolution, processor will reboot automatically, after reboot, the new output resolution will take effect

**Notice:** Apply new output resolution will reset processor, all existing configuration in processor will be lost after reboot.



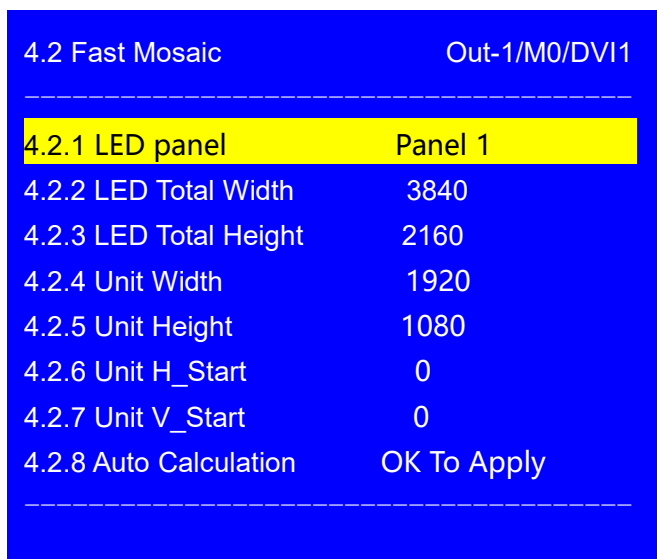
Picture 6-4c: Custom Output resolution setup



## 2.Mosaic Setup

Mosaic setup menu consists 4.2 Fast Mosaic and 4.3 Manual Mosaic . The distinctions are described as following table:

Mosaic Menu	Description
4.2 Fast Mosaic	User set total screen resolution and units screen resolution, processor automatically calculate mosaic parameter and apply
4.3 Manual Mosaic	Manually configure input and output parameters of each output port, generally used for fine-tuning after fast mosaic



Picture 6-4d: Fast mosaic setup

### Fast Mosaic Procedures:

1. Press display mode button (M0, M1, M2, M+) to select the display mode
2. Press Out-n, DVI-n to select the output port;
3. Firstly set the total width and height of the whole LED screen, secondly set the size and position of the unit screen driven by the corresponding output port.
4. Select 4.2.8 Auto Calculation, press OK button to apply the configuration, D6000 will automatically calculate and complete the mosaic;
5. If fast mosaic has deviation, user can enter 4.3 Manual Mosaic to adjust the input and output parameter manually;

4.3 Manual Mosaic	Out-1/M0/DVI1	
4.3.1 In Width	3840	3840
4.3.2 In H_Start	0	0
4.3.3 In Height	2160	2160
4.3.4 In V_Start	0	0
4.3.5 Out Width	1920	1920
4.3.6 Out H_Start	0	0
4.3.7 Out Height	1080	1080
4.3.8 Out V_Start	0	0

Picture 6-4e: Manual mosaic setup

4.3 Manual Mosaic menu is usually used for fine-tuning after fast mosaic.

**Setup procedure:** Select 4.3 Manual Mosaic, press the display mode button (**M0**, **M1**, **M2**, **M+**) to select preset mode, then press **Out-n**, **DVI-n** to select corresponding DVI output port, press **↑**, **↓** button to select the menu item, rotate **Knob** to adjust parameter value, press **OK** to save and apply.

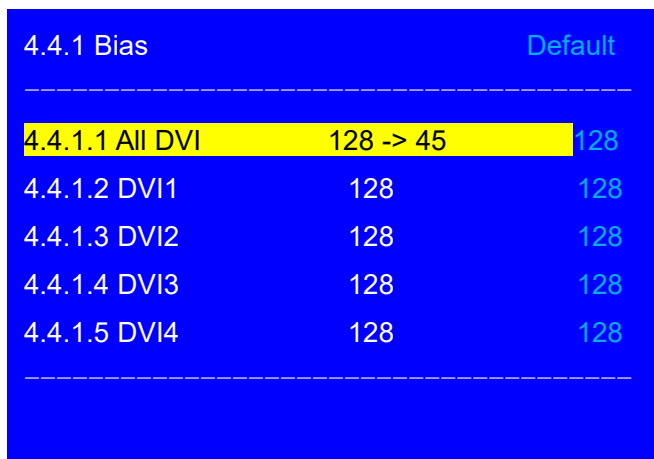
### 3. Image quality setup

Enter 4. Output Image menu, press **↓** button to select 4.4 Color & Brightness, etc., press **OK** to enter the following menu, under this menu, output image brightness, bias and color parameters are adjustable.

**Setup procedure:** enter the menu, press **↑,↓** key to select the menu item, rotate **Knob** button to adjust the current parameters, press **OK** to save and apply.



Picture 6-4f: Image quality setup



Picture 6-4g: Image quality setup

4.4.2 Brightness		Default
3.4.2.1 All DVI	128 -> 45	128
3.4.2.2 DVI1	128	128
3.4.2.3 DVI2	128	128
3.4.2.4 DVI3	128	128
3.4.2.5 DVI4	128	128

Picture 6-4h: Image quality setup

4.4.3 Color		Default
3.4.3.1 All DVI	128 -> 45	128
3.4.3.2 DVI1	128	128
3.4.3.3 DVI2	128	128
3.4.3.4 DVI3	128	128
3.4.3.5 DVI4	128	128

Picture 6-4i: Color setup

## 4. Data recovery setting

4. Output Image (Out-1)	
4.1 Resolution	1920x1080_60Hz
4.2 Fast Mosaic	>>
4.3 Manual Mosaic	>>
4.4 Color & Brightness, etc.	>>
4.5 Resume Data	OK To Apply

Write System Data To Out-1

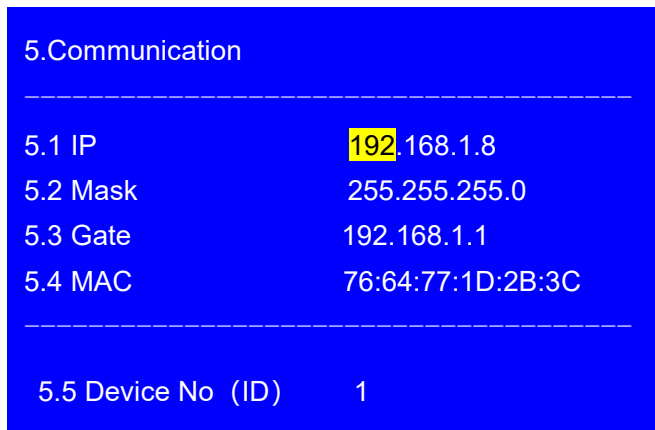
Picture 6-4j: Output image setup

**4.5 Resume Data** function is used to restore system data to target output card, generally used after replacing new card.

**Operation procedure:** Press **Out-n** to select output card , press **↑,↓** to choose **4.5 Resume Data** menu , press **OK** to selection, then press **OK** again to confirm and apply, the selected output card data will be restored.

## 6-5 Communication Setup

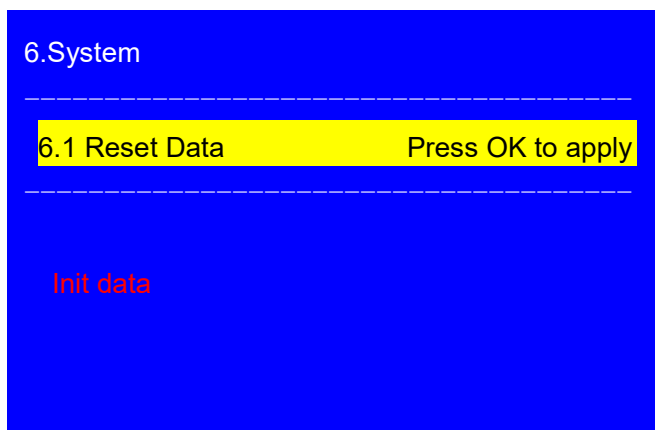
Press **Setup** to enter the user setup menu, press **↑,↓** button to select **5.communication** . Press **OK** button to enter the following menu.



Picture 6-5a: Communication parameter setup

## 6-6 System Setup

Press **Setup** button into user setup menu, press **↑,↓** to select the **6.system**, then press **OK** into menu as following picture



Picture 6-6a System setup

**6.1 Reset Data** menu is used to initialize processor to factory default state.

**Operation procedure:** Under this menu, press **OK** to select, then press **OK** again to confirm and apply . The device will automatically reboot and reset to factory state.

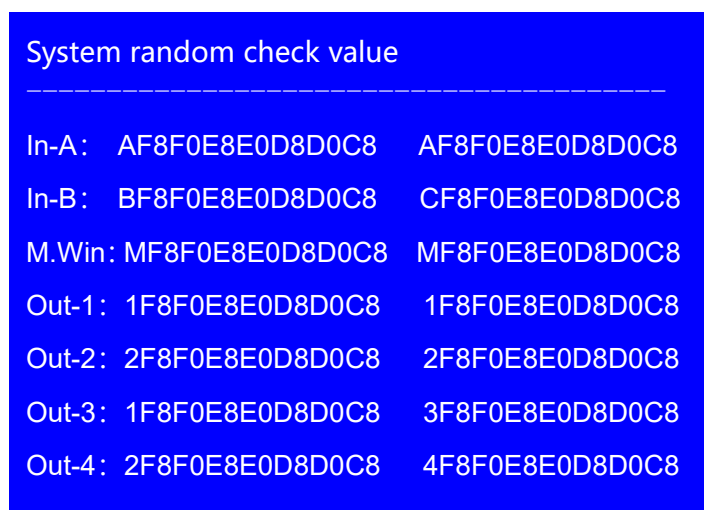
## Chapter 7: Device Maintenance

D6000 series processor adopt inserting card design. Benefit from system data recovery , system random check and verification, as well as the data import and export function, D6000 device engineering maintenance is easy and convenient.

The following is description of the function mentioned above.

### 7-1 System Random Check And Verification

Input and output card data is backed up on the D6000 backboard, both data change simultaneously when configure the input and output card. Meanwhile, when changing the output resolution and other operations, the system will write a group of random checksum number to backboard as well as the corresponding input and output board, that is system random check value. This checksum value can be viewed in the **system information** menu by pressing **Info** button.

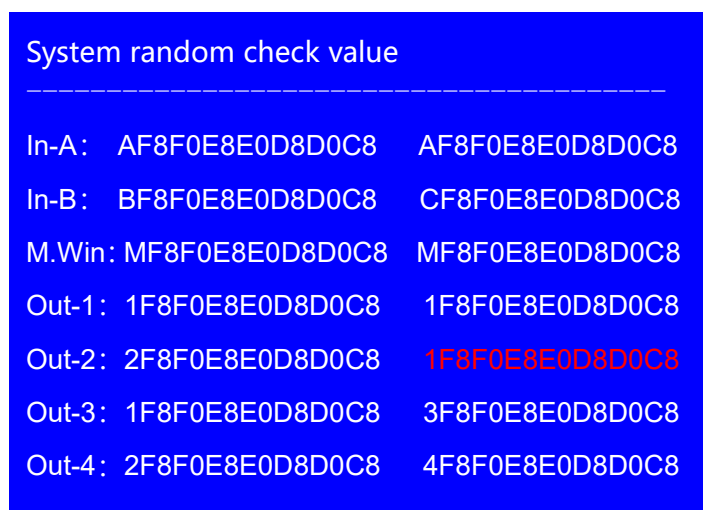


System random check value	
-----	
In-A:	AF8F0E8E0D8D0C8 AF8F0E8E0D8D0C8
In-B:	BF8F0E8E0D8D0C8 CF8F0E8E0D8D0C8
M.Win:	MF8F0E8E0D8D0C8 MF8F0E8E0D8D0C8
Out-1:	1F8F0E8E0D8D0C8 1F8F0E8E0D8D0C8
Out-2:	2F8F0E8E0D8D0C8 2F8F0E8E0D8D0C8
Out-3:	1F8F0E8E0D8D0C8 3F8F0E8E0D8D0C8
Out-4:	2F8F0E8E0D8D0C8 4F8F0E8E0D8D0C8

Picture 7-1a: System random checksum value

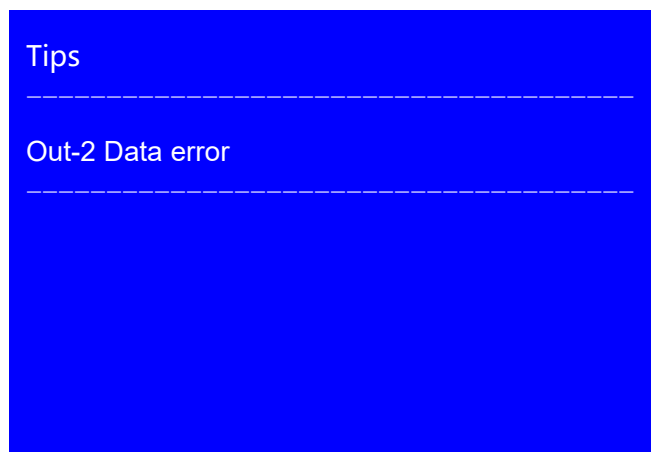
As shown on the picture above, random checksum value description as following:

1. There are two checksum values for each board, the first line corresponds to the checksum value of the system, and the second line corresponds to the checksum value of the board;
2. The first bit of the checksum value represents the card, if it starts with A, it means the data belongs to A card;
3. If the card encounter communication malfunction or data disorder, the card's checksum value will be different from the system which will be displayed in red. There will be prompt on device LCD screen when processor boot up;



System random check value		
-----		
In-A:	AF8F0E8E0D8D0C8	AF8F0E8E0D8D0C8
In-B:	BF8F0E8E0D8D0C8	CF8F0E8E0D8D0C8
M.Win:	MF8F0E8E0D8D0C8	MF8F0E8E0D8D0C8
Out-1:	1F8F0E8E0D8D0C8	1F8F0E8E0D8D0C8
Out-2:	2F8F0E8E0D8D0C8	1F8F0E8E0D8D0C8
Out-3:	1F8F0E8E0D8D0C8	3F8F0E8E0D8D0C8
Out-4:	2F8F0E8E0D8D0C8	4F8F0E8E0D8D0C8

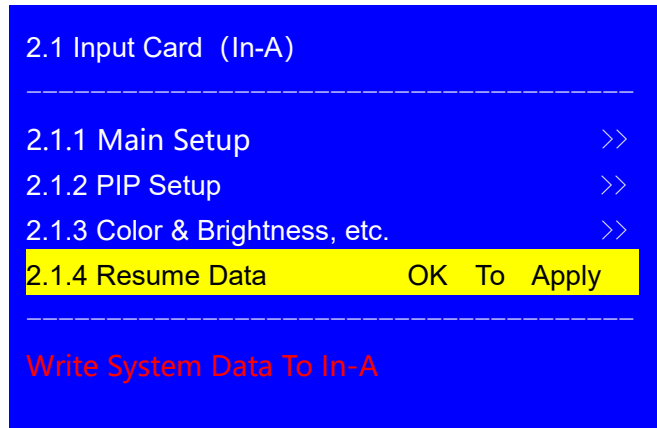
Picture 7-1b: System random checksum value



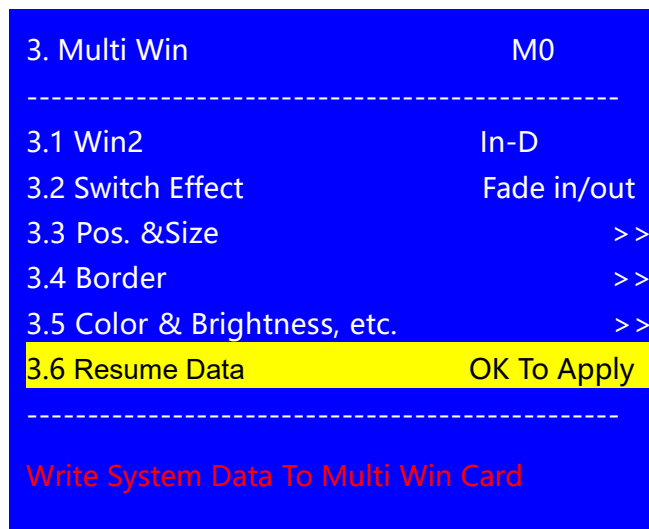
Picture 7-1c: Boot error prompt

## 7-2 Data Recovery

After data error occurs in the board card or replacement of a new board card, we can write the original saved system data into the corresponding board card to avoid repeated parameter setting, which is the data recovery function. This menu in input card Settings 2.1.4 Resume Data and output card Settings 4.5 Resume Data (in user manual P.38 and P. 45?).

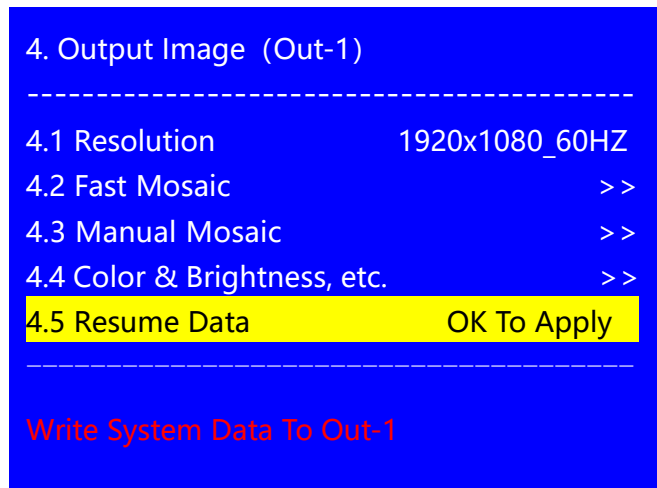


Picture 7-2a: Input card data recovery



Picture 7-2b: Multi-wind card data recovery

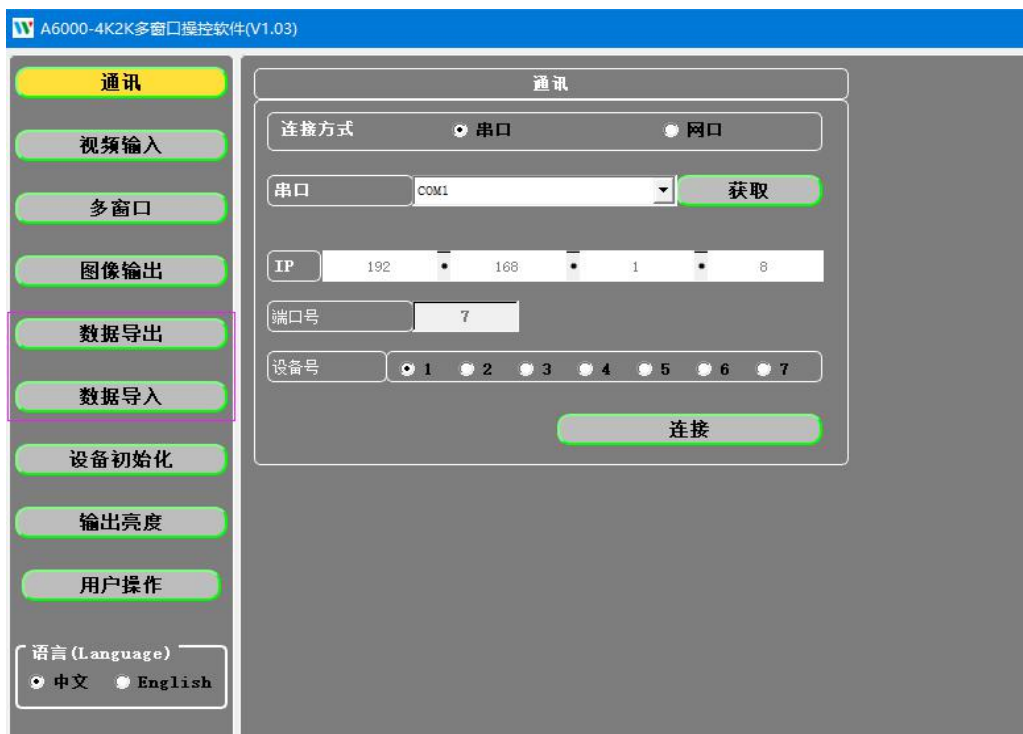




Picture 7-2C: Output card data recovery

### 7-3 Data Export And Import

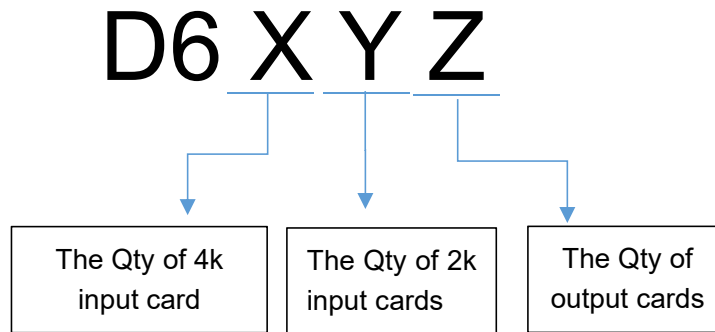
Except data recovery function mentioned above, we can also use the configuration data import and export function to facilitate processor configuration and engineering maintenance. The export function is used to save current processor configuration to PC as a file for back up. The import function is used to load the saved configuration file from PC to processor, thus to restore configuration to previous status. User can easily and conveniently configure processor via import and export function.



Picture 7-3a PC software import and export

## Chapter 8: Model Serials Description

D6000 series adopt inserting card design, hence the input a card and output card can be customized according to different requests. Refer to the following model code description of different cards built in.



Eg. D6124 represents 1\*4K input card, 2 \*2K input cards and 4 output cards.

