



# User Manual

## Multi-Screen Splicing Processor J6

Rev1.0.0 NS160100147

## **Statement**

Dear users,

Welcome to use the J6, a multi-screen splicing processor. This manual is intended to help you to understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this manual at any time without notice. Any problem in using this manual or any good suggestion, please contact us through ways provided in the manual. We will try our best to solve the problems, and evaluate and adopt the suggestions as soon as possible. Thank you very much!

## **Copyright ©2017 NovaStar**

All rights reserved. No part of this document may be copied, reproduced or translated. It shall not otherwise be recorded, transmitted or stored in a retrieval system without the prior written consent of NovaStar.

## **Trademarks**

 is the registered trademark of NovaStar.

## Table of Contents

---

Safety Notice.....	1
Update History .....	2
Glossary of Terms .....	3
1 Overview .....	4
1.1 System Architecture.....	4
1.2 Software Installation .....	4
2 Appearance .....	5
2.1 Front Panel.....	5
2.2 Rear Panel.....	6
3 Signal Connection .....	8
4 Menu Operations.....	9
4.1 Screen Settings .....	错误!未定义书签。
4.2 Window Settings .....	11
4.3 Preset Recall.....	12
4.4 Input Settings.....	12
4.5 Display Control .....	12
4.6 Advanced Settings .....	13
4.7 Communication Settings.....	13
4.8 Language Settings .....	14
5 System Mode.....	15
5.1 Switcher.....	15
5.2 Splicer.....	17
6 Electrical Parameters .....	19
7 Installation Dimensions .....	21
8 Troubleshooting .....	22

## Safety Notice

---

To avoid potential hazards, please use this product according to regulations. In the event of breakdowns, non-professionals are not allowed to disassemble it for maintenance without permission. Please contact the after-sales department of NovaStar timely. Power outlet should be installed near the unit and easy to reach.

	High voltage danger: The operating voltage range of this product is 100 to 240V AC.
	Grounding: This product is grounded through the grounding cord of power supply. Please keep the grounding conductor well grounded.
	Electromagnetic interference: Keep this product far away from magnets, motors and transformers.
	Moisture proof: Keep this product in a dry and clean environment. In case of liquid immersion, please pull the power plug out immediately.
	Keep the product away from flammable and explosive hazardous substances.
	Prevent liquids or metal fragments from dropping into the product in order to avoid safety accidents.

## Change History

---

Date	Version	Description	Remarks
2017/3/22	V1.0.0	Initial release	

## Glossary of Terms

---

**Preview:** Preview includes input preview and preview in switcher mode.

**OSD:** On Screen Display. Preloaded images or texts can be overlapped and displayed on the any area of the screen.

**Genlock:** Synchronization lock, enabling one system or multiple systems in sync with the same video source.

**Frame lock:** The accuracy level of synchronization.

**Cascade:** Connect multiple J6 units in specific order so as to output images with larger resolution.

Note: Terms explained here are only for the chapters below. We will be sorry if these terms cannot help you.

# 1 Overview

Developed by NovaStar, J6 is a high-performance multi-screen splicing processor featuring powerful image processing. Multiple video inputs can be overlapped and displayed on a display system composed by 4 screens after each of the input is scaled. J6 supports a wide range of inputs which can be spliced into a bigger picture.

Based on a powerful FPGA processing platform, J6 supports quick seamless switch between input sources and supports transition effects such as fade, etc., allowi you to experience more flexible screen layouts.

In addition, J6 can work with V-Can, a new smart management software, to enable more screen splicing effects and better satisfy your needs.

## 1.1 System Architecture



## 1.2 Software Installation

Just like the installation of other common software, install V-Can following the setup wizard.



In case of antivirus or firewall popups during installation, please permit them because serial driver may need to be installed during program installation.

## 2 Appearance

### 2.1 Front Panel



①	Power switch	ON/OFF
②	Window buttons	<p>WIN1-WIN6, press a button to enter the relevant menu of window properties for quick settings.</p> <ul style="list-style-type: none"> <li>It indicates the window is opened when the indicator light is on.</li> <li>It indicates the window is closed when the indicator light is off.</li> <li>When the window is opened, hold down the window button to close the window.</li> </ul>
③	Input source buttons	<p>Status of signal sources</p> <ul style="list-style-type: none"> <li>It indicates the signal source is accessed but not in use when the indicator light is on.</li> <li>It indicates the signal source is accessed and in use when the indicator light becomes brighter.</li> <li>It indicates the signal is not accessed when the indicator light is off.</li> </ul>
④	LCD panel	Used for displaying current status and menus of the processor.
⑤	Knob	<ul style="list-style-type: none"> <li>Rotate the knob to select menus or adjust parameters</li> <li>Press the knob to enter main menu or confirm current selection.</li> </ul>
⑥	ESC button	Exit from current operation or option.

⑦	Navigation button	Click the button to enter quick navigation and quickly learn how to use J6.
⑧	Function buttons	<p><b>SCENE:</b> Press the button to enter the “Preset Recall” menu. 16 presets are available for users to use, save, delete, etc.</p> <p><b>TEST:</b> Press the button to select a test pattern.</p> <p><b>OSD:</b> Switch for loading images or texts. Prestored images or texts can be overlapped and displayed.</p> <p><b>Fn (TAKE):</b> customizable function button</p> <ul style="list-style-type: none"> <li>➤ Fn (TAKE) button can be set as “Screen Settings”, “Window Settings”, “Black Out” or “Freeze” when the “System Mode” is set to “Splicer”.</li> <li>➤ Fn (TAKE) button can be set as “Take”, “Switch” when the “System Mode” is set to “Switcher”.</li> </ul>

**Tip:**

Additional description for **SCENE:** Users can rename the presets through the control software V-Can.

## 2.2 Rear Panel

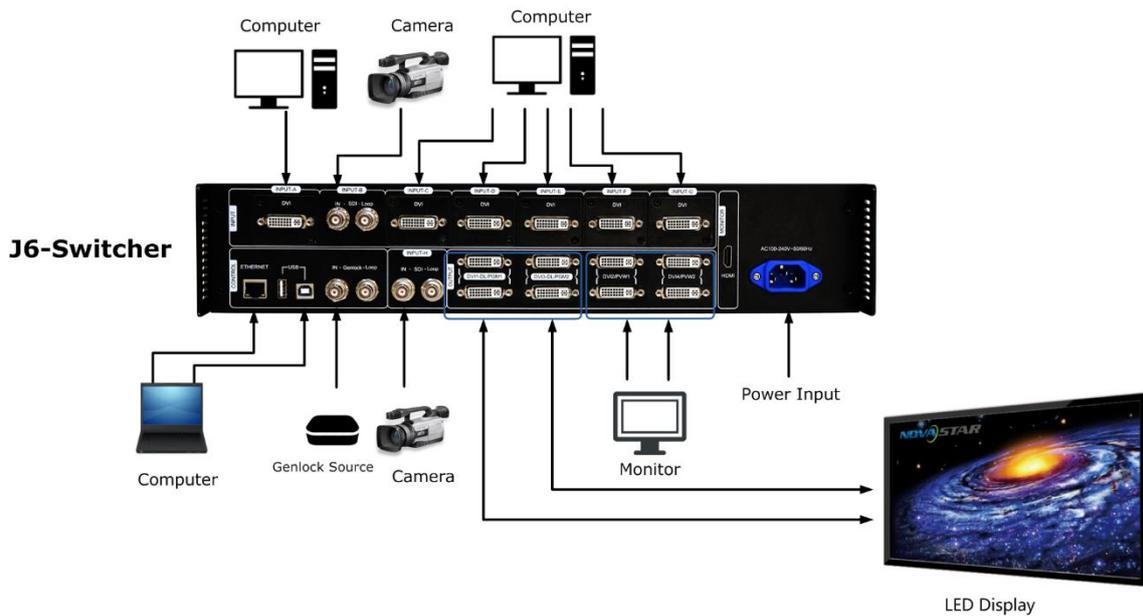
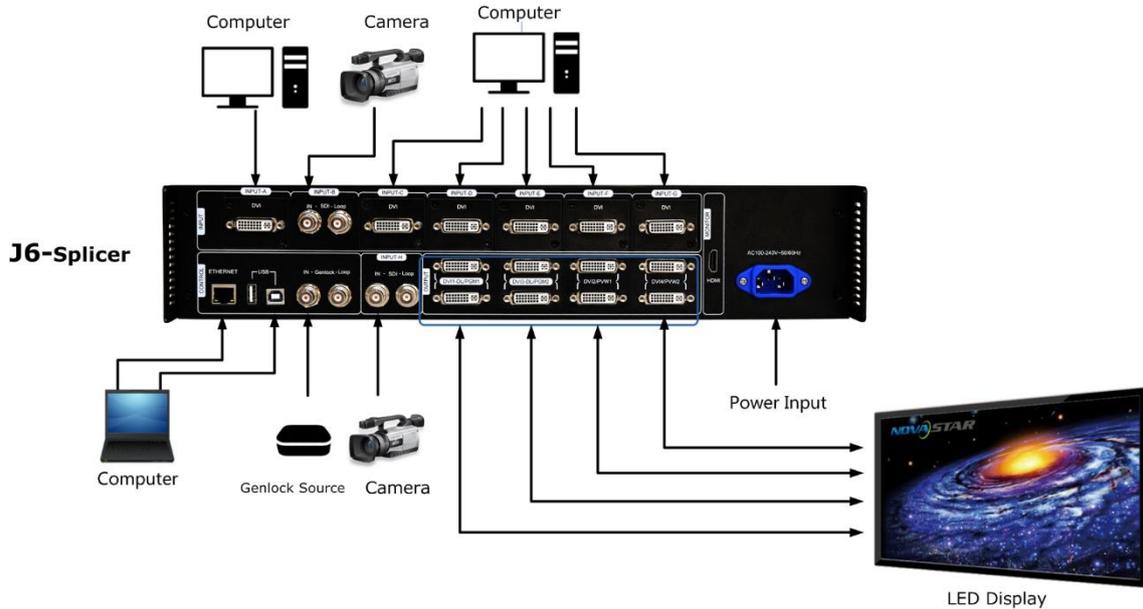


<b>Inputs</b>	
Input-A	DualLink DVI
Input-B	SDI
	SDI Loop
Input-C	Can be changed to DVI/HDMI/VGA/CVBS depending on the requirements of users to allow input of different video sources.
Input-D	DVI1
Input-E	DVI2
Input-F	DVI3
Input-G	DVI4
Input-H	SDI
	SDI Loop
<b>Outputs</b>	

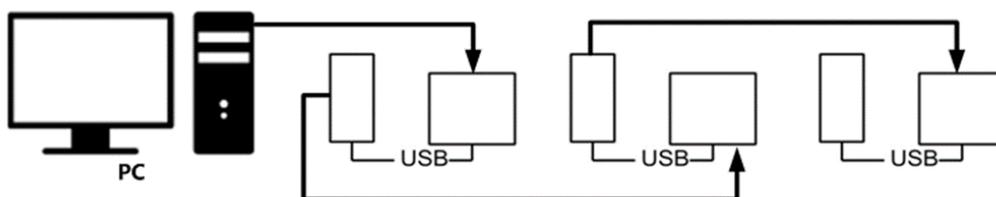
HDMI preview	HDMI output, capable of previewing the status of 8 input sources in a 9-window screen with the Logo of the company displayed in the center.
DVI1-DL/PGM1	DVI1 output This interface works as PGM1 output when system mode is switcher, and as Duallink out1 when output mode is set to Duallink.
DVI2/PGM2	DVI2 output This interface works as PGM2 output when system mode is switcher, and is invalid when output mode is set to Duallink.
DVI3-DL/PVW1	DVI3 output This interface works as PVW1 output when system mode is switcher, and as Duallink out2 when output mode is set to Duallink.
DVI4/PVW2	DVI4 output This interface works as PVW2 output when system mode is switcher, and is invalid when output mode is set to Duallink.
<b>Control</b>	
ETHERNET(RJ45)	Control interface
USB(Type-B)	USB control interface for connecting upper computer
USB(Type-A)	For cascading multiple J6 units
Genlock-Loop	For connecting synchronous signals and for synchronous cascade of J6 units.
<b>Power</b>	
AC 100-240V~50/60HZ	AC power interface

### 3 Signal Connection

Please refer to the interface introduction in previous chapter to connect hardware devices (Please turn the power off before connecting signals).

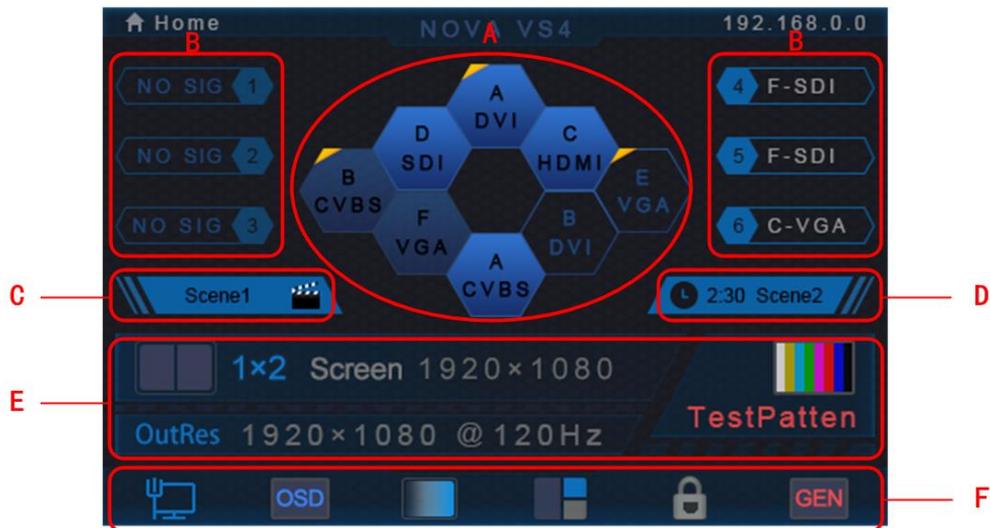


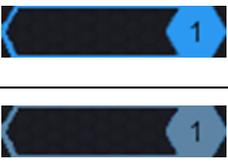
If multiple J6 units are required for control, please connect them according to the figure below.



## 4 Menu Operations

After startup, the home screen on the LCD panel is shown as below:

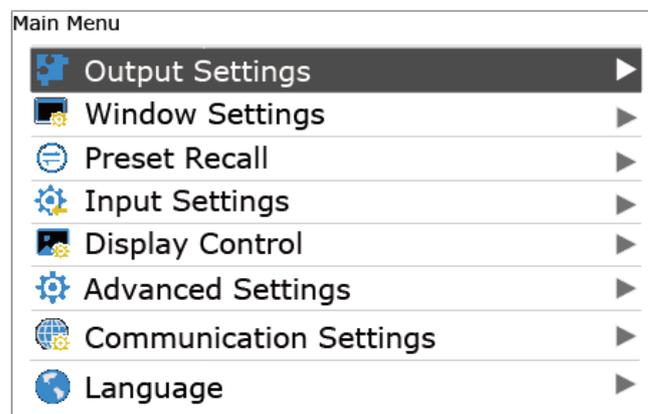


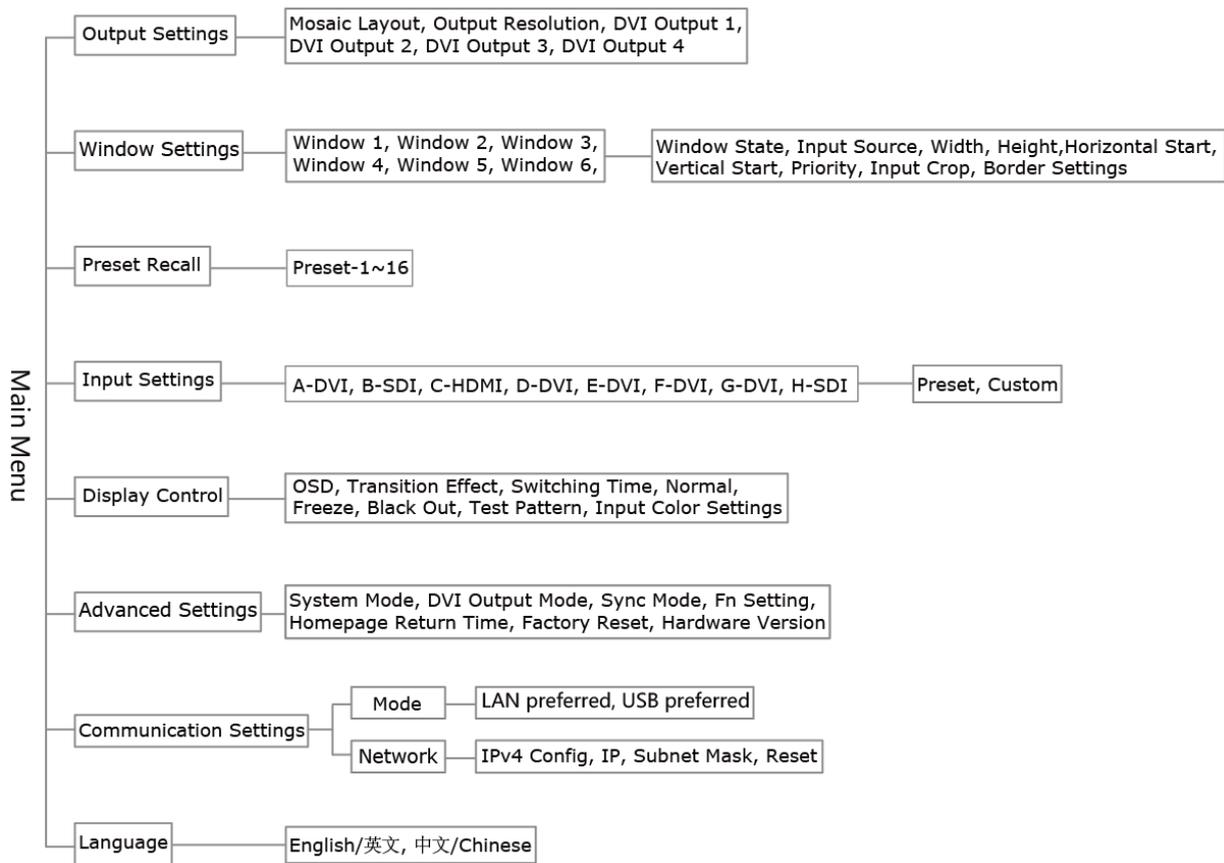
A		<p>Pure color: The signal source is in use and has signal but no input backup.</p> <p>Semitransparent: The signal source is not in use and has signal but no input backup.</p> <p>Transparent: The signal source is not in use and has no signal and input backup.</p>
B		<p>Transparent: The window has input signal and the type of the signal source is displayed in the window.</p> <p>Semitransparent: The window has no input signal and "NO SIG" is displayed in the window.</p>
C		<p>Current preset is displayed. Pure color indicates the preset is turned on and semitransparent indicates the preset is not turned on.</p>
D		<p>Next preset and its turn-on time are displayed. Pure color indicates the schedule of the preset is displayed and transparent indicates the schedule is not displayed and showing "N/A".</p>
E		<p>Screen structure and size, screen structure supports: 1x1, 1x2, 1x3, 1x4, 2x1, 2x2, 3x1, 4x1.</p>
E		<p>Output resolution Maximum supported resolution: 3840x1080@60Hz.</p>
E		<p>Prompt for test pattern, freeze, black out, etc. No icon is shown when the unit works normally.</p>

F		Device connection status: Not connected/connected to network/connected to USB
		OSD on/OSD off
		Transition effects: cut/fade
		Working mode: splicer/switcher
		Button unlocked/button locked Hold down the knob and ESC button to lock or unlock the buttons. All the buttons on the panel are not available after they are locked.
		Genlock is turned off. /The reference source of Genlock is lost or abnormal. /Genlock is locked. /Genlock is to be locked.

In the home screen, **press the knob** to enter main menu (Press the **knob** to enter sub-menus and press **ESC** to return to the previous menu. Rotate the knob clockwise to move down and rotate anticlockwise to move up.).

Main menu is shown as the figure below. The main menu includes: "Screen Settings", "Window Settings", "Preset Recall", "Input Settings", "Display Control", "Advanced Settings", "Communication Settings" and "Language".

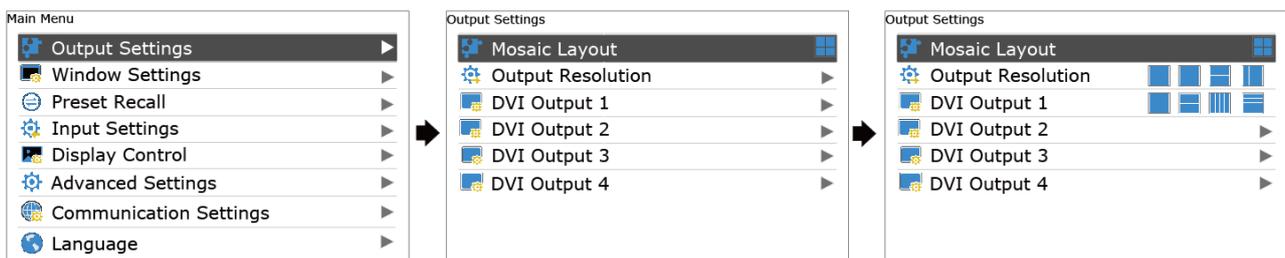




J6 menu tree

### 4.1 Output Settings

As shown in the figure below, set the mosaic mode of output images in the “Output Settings” menu. Set the resolution of output images in “Output Resolution”. Preset resolution and custom resolution are optional. Set the **Width** and **Height** of current screen in the “DVI Output” menu.



### 4.2 Window Settings

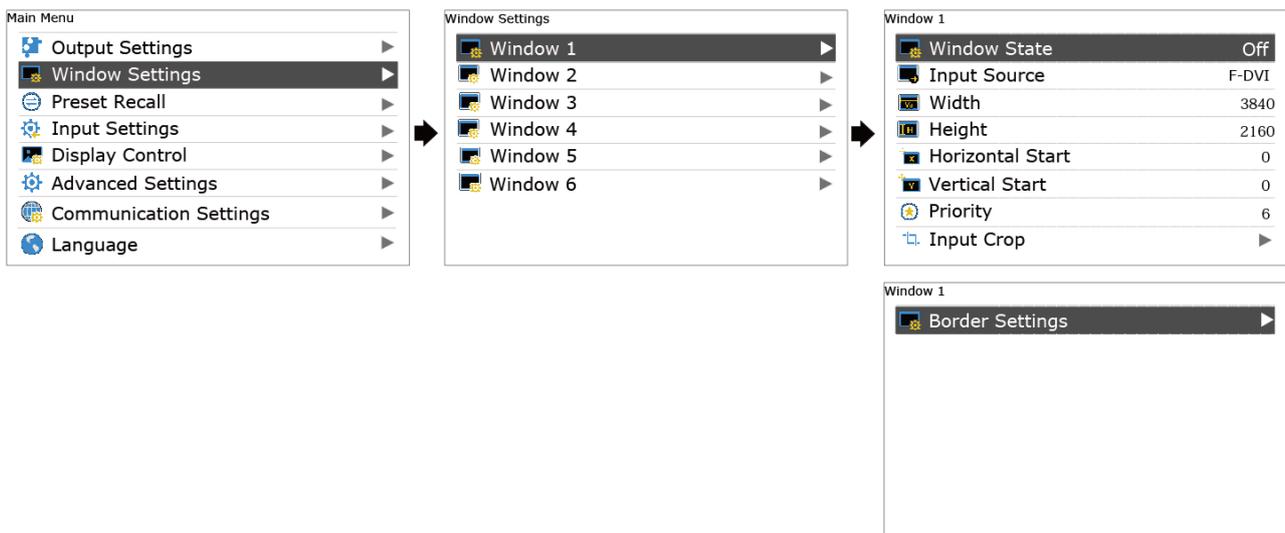
This processor is capable of displaying 6 windows at most and the input source, size, position, priority, input crop, border parameters, etc. of each window are settable.

Priority: allows to set the display priority of current window.

Input Crop: allows to turn on “Input Crop” and display cropped content on LED screen.

Border Settings: allows to add or delete borders and set border width and height as well

as border color.



### 4.3 Preset Recall

Switch presets. Apply the preset parameters directly. 16 presets in total are available for users to set and use.

### 4.4 Input Settings

Input resolution of signal sources including DVI and HDMI can be set. Preset resolutions and custom resolution are available for users.

Preset resolutions include: 1600×1200, 1680×1050, 1920×1080, 1920×1200.

Preset refresh rates include: 50Hz, 59.9Hz, 60Hz, 75Hz, 120Hz.

Custom resolution includes: custom width, custom height and custom refresh rate.

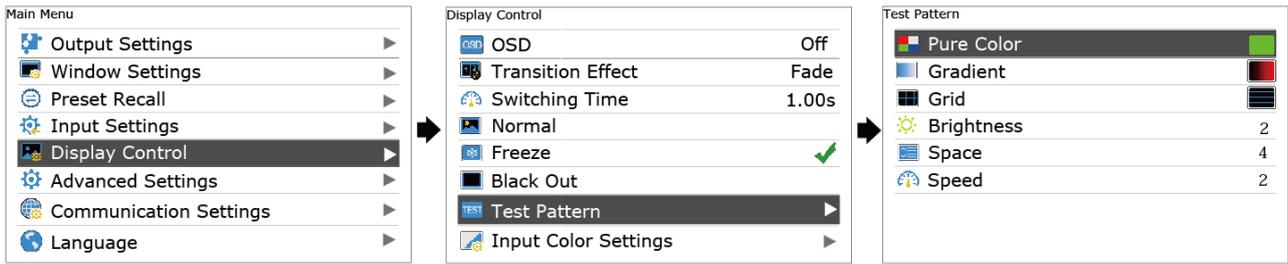
#### ⚠️ Note:

- 1) Select **“Apply”** and confirm the selection after the settings are done, and then the settings will take effect.
- 2) Total pixels ≤ 2.1 million, width of custom resolution cannot be greater than 3840 and height not greater than 1080.

### 4.5 Display Control

As shown in the figure below, “OSD” can be turned on/off, and “Transition Effect” (including fade and cut), “Switching Time”, display state and image quality can be set in the “Display Control” menu.

Input Color Settings: Select an input source to be adjusted to adjust its brightness, contrast, saturation, hue or reset to defaults.



Tip:

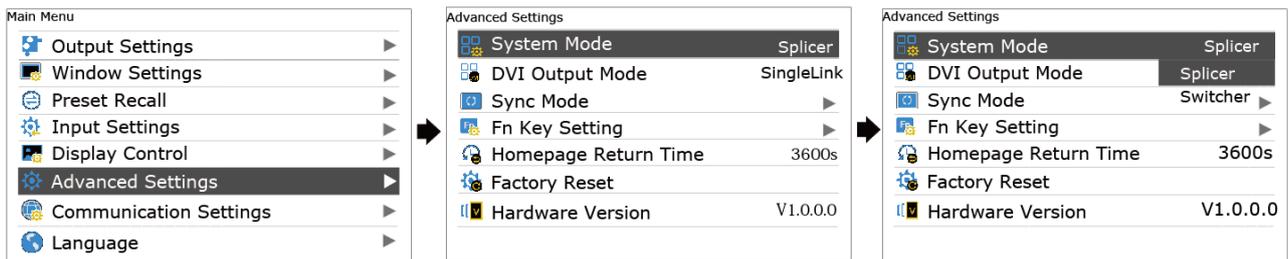
- 1) OSD function description: You can turn on/off OSD. Control software is required for adding and setting detailed contents.
- 2) Transition effect description: Switching time setting can change the transition time of an effect.

### 4.6 Advanced Settings

System modes include: "Splicer" and "Switcher".

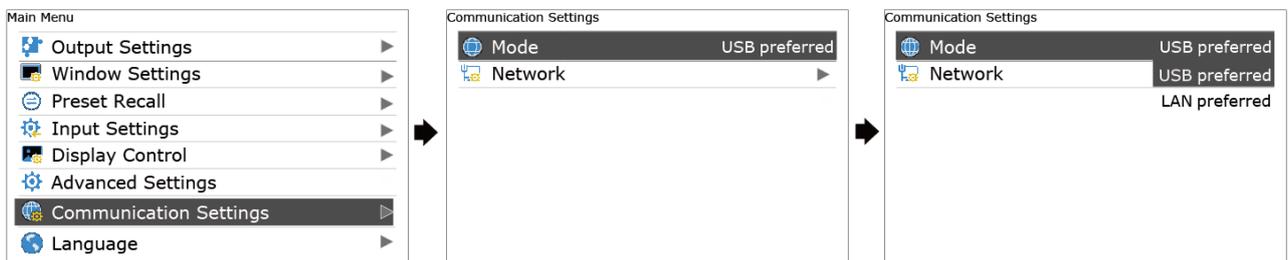
Output modes include: "SingleLink" and "DualLink".

In synchronous mode, any one of the input sources can serve as synchronous source. Following synchronous sources are selectable: GenLock, Input-A, Input-B, Input-C, Input-D, Input-E, Input-F, Input-G and Input-H.

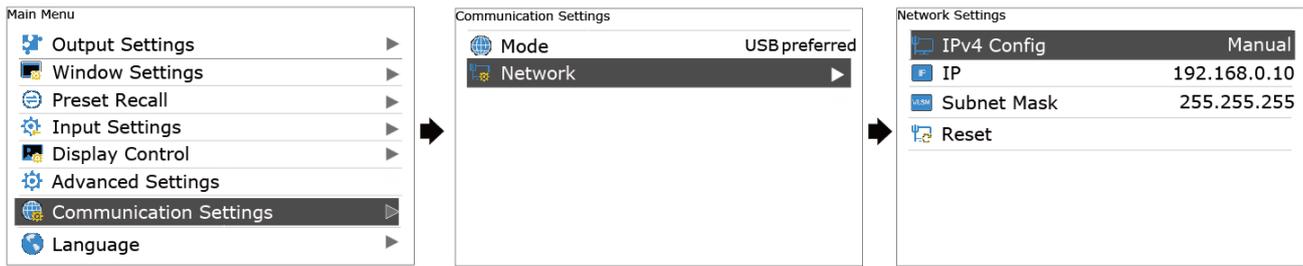


### 4.7 Communication Settings

Communication modes include: "USB preferred" and "LAN preferred".



"Network": allows to set IPv4 Config (manual and auto), IP address, and subnet mask or to reset to default network parameters.

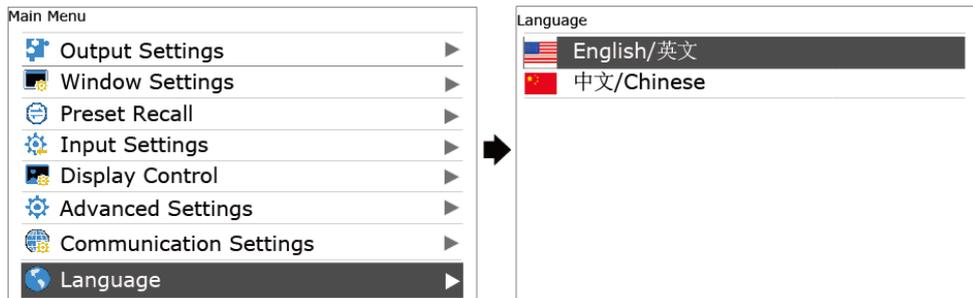


Tip:

- 1) This processor supports two control modes: USB and Ethernet cable. Please select according to actual needs.
- 2) IP and subnet mask can be edited only when network mode is set to “Manual”.

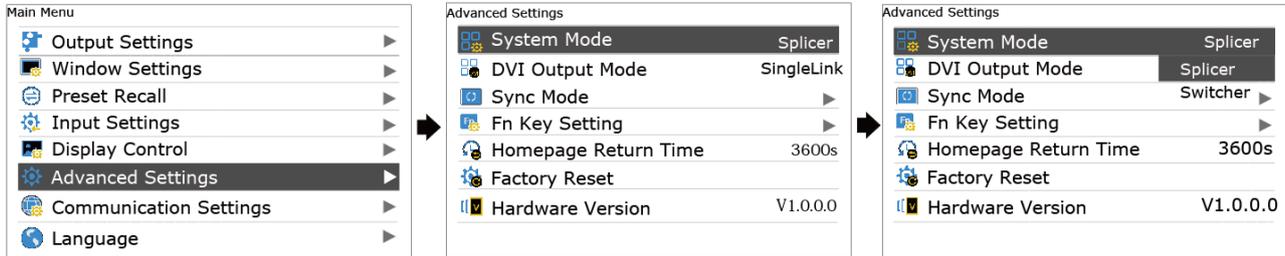
## 4.8 Language Settings

J6 currently supports “Chinese” and “English” only. Users can switch languages as required.



## 5 System Mode

System modes include “Splicer” and “Switcher”. In these two modes, J6 needs to work with the software V-Can.

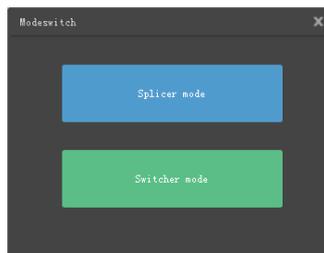


### 5.1 Switcher

Step 1: Refer to the [hardware connection diagram](#) to connect hardware devices.

Step 2: Start V-Can, connect devices and adjust their parameters. Set system mode to “Switcher”.

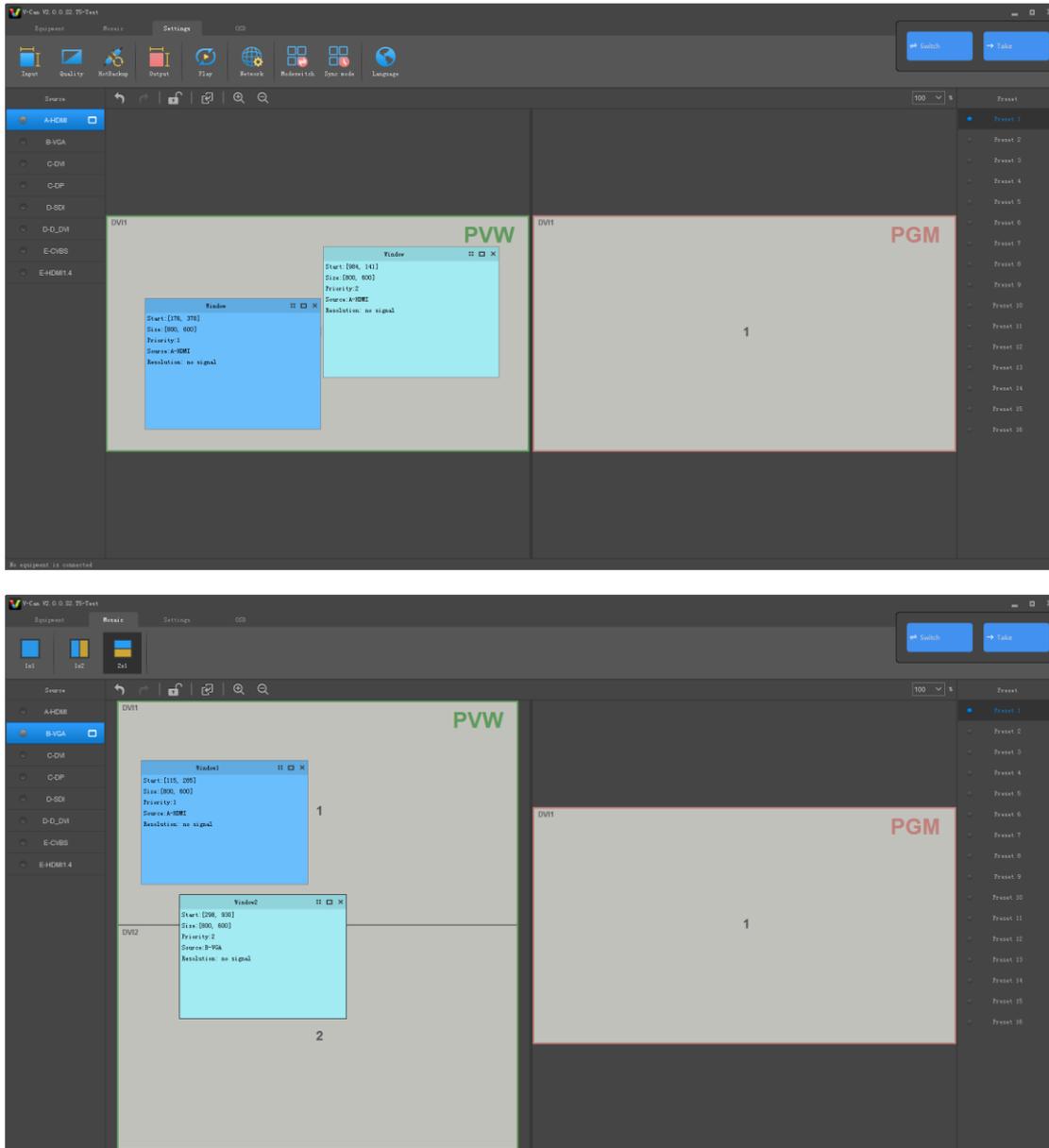
Step 3: Add windows in editing area and set window parameters. Then output the edited content to LED screen.



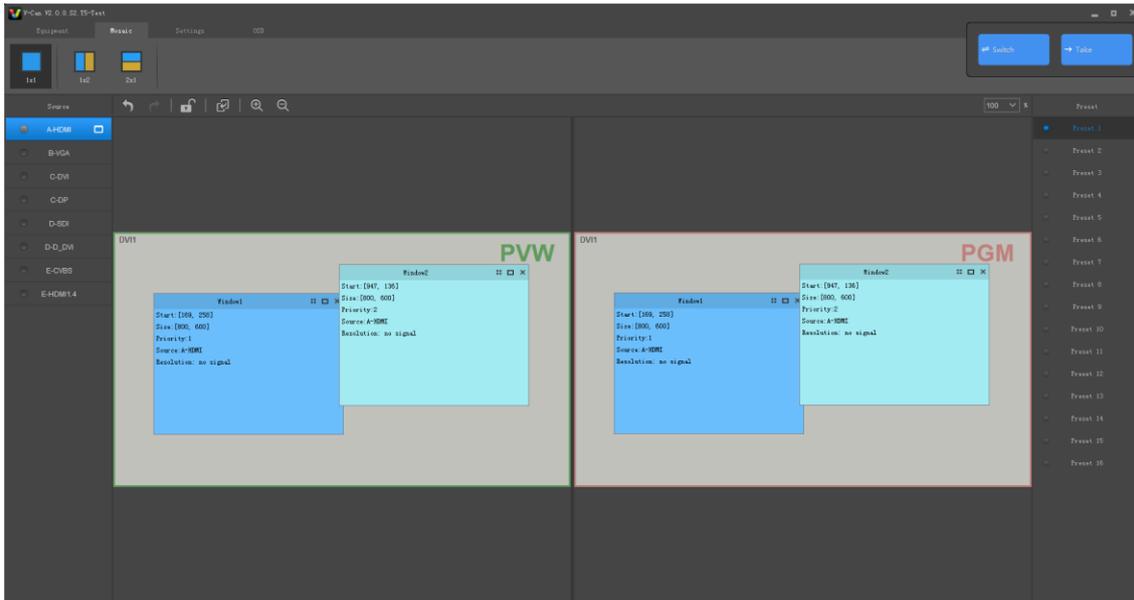
“PVW” area is for editing. Different signal sources can be selected. Windows can be added and window parameters can be edited. Six windows can be added at most.

Splicing area supports up to 1×2 layout (Splicing mode can be chosen without limitation). Windows can be overlapped. The overlapped area displays the content of the window with higher priority. After the content is edited, result can be previewed on the monitor and can be adjusted.

The display parameters set before can be saved as preset, which is convenient for using next time.



As shown in the figure below, content in “PGM” area is being displayed on the LED screen. After the content to be output is edited in the “PVW” area, click the “TAKE” button in the top right corner of the page and then the content in “PVW” area will be mapped to “PGM” area. LED screen will display the edited content.



## 5.2 Splicer

Step 1: Refer to the [hardware connection diagram](#) to connect hardware devices.

Step 2: Start V-Can, connect devices and adjust their parameters. Set system mode to "Splicer".

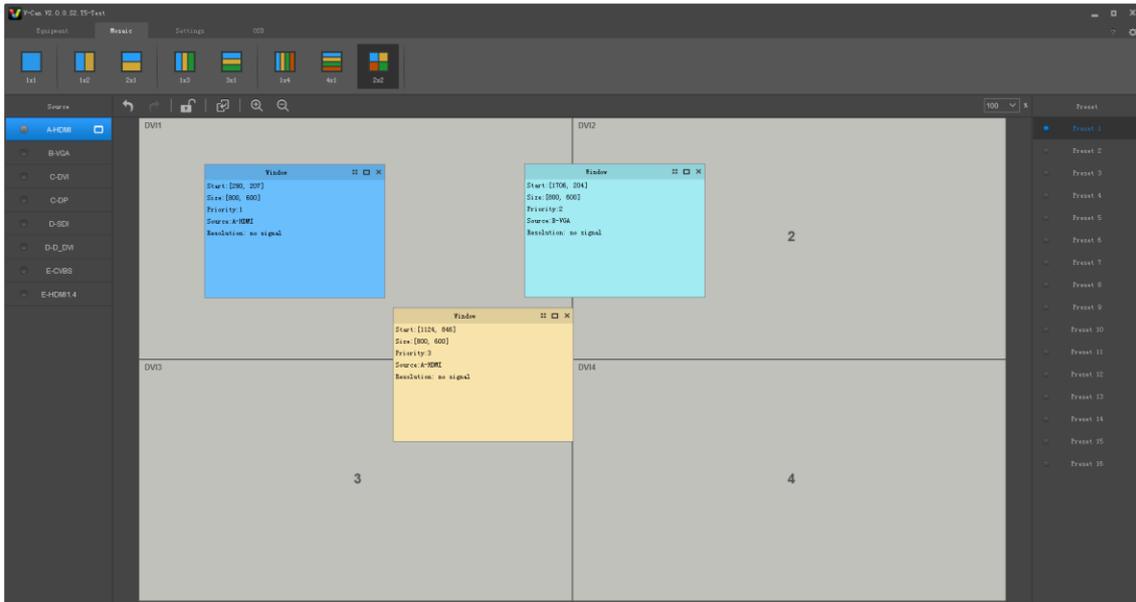
Step 3: Add windows in editing area and set window parameters. Then the edited content is displayed on LED screen in real-time.



Splicing area supports up to 2×2 layout. (Splicing mode can be chosen without limitation).

Different signal sources can be chosen. Windows (six at most) can be added. Window parameters can be edited. Windows can be overlapped. The overlapped area displays the content of the window with higher priority.

The display parameters set before can be saved as preset, which is convenient for using next time.



## 6 Electrical Parameters

<b>Inputs</b>		
Port	Qty	Resolution specifications
DuallinkDVI/HDMI1.4/DP1.1 (Choose one from these inputs)	1	Supports 4K*2K@30Hz 2560×1600@60Hz(downward compatible)
DVI(DVI-D)	4	VESA standard 1920×1080@60Hz(downward compatible)
CVBS(BNC)/VGA(DB25)/HDMI/ DVI(DVI-D) (Choose one from these inputs)	1	VESA standard 1920×1080@60Hz(downward compatible)
SDI(BNC)	2	720p, 1080p

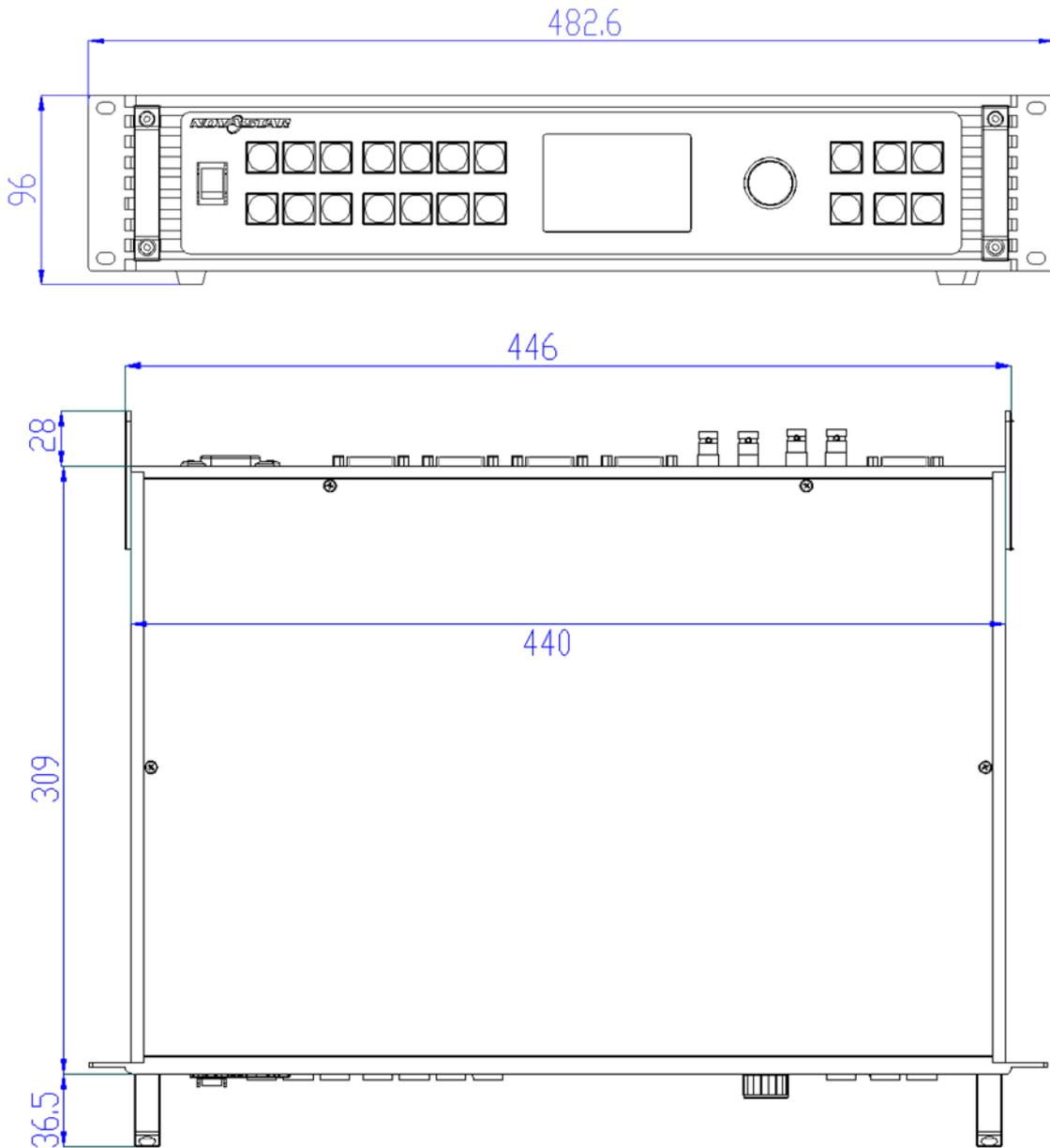
<b>Outputs</b>		
Port	Qty	Resolution specifications
DVI(DVI-D)	4 groups (8 channels)	Resolution is programmable output. The maximum supported resolution of each port is 1080p@60Hz (DualLink output is available for DVI1 and DVI3.)
SDI Loop(BNC)	2	480i, 576i, 720p, 1080i/p(3G SDI), same as SDI input
HDMI(Type A)	1	Supported output resolution: 1920×1080@60Hz

<b>Control</b>		
Port	Qty	Description
ETHERNET	1	Control interface
USB(Type-B)	1	Control interface for connecting upper computer
USB(Type-A)	1	For cascading multiple J6 units

<b>Overall Specifications</b>	
Input power	AC 100V-240V, 50/60Hz
Overall power consumption	50W
Operating temperature	-20°C-60°C
Dimensions	482.6×373.5×96(mm)
Weight	4.66kg(10.27lb)

## 7 Installation Dimensions

---



(mm)

## 8 Troubleshooting

Problem	Solution
LED screen doesn't light up.	Make sure the power is properly connected and switched on, and the LED screen is connected properly and works normally.
DVI has no output image.	<p>Make sure the input channel has input image and the image is displayed correctly.</p> <p>Make sure the output settings are correct.</p> <p>Make sure the output settings are correct and whether the window is removed from the LED screen.</p> <p>Make sure DVI output is properly connected.</p> <p>If a preview monitor is connected, make sure the monitor supports the output resolution of the processor.</p> <p>Reset the processor and try the operations again, then check whether there is image output.</p>
DVI output image is abnormal.	<p>Check output settings and make sure parameters are properly set.</p> <p>Check the status bar of the home screen on the LCD panel and make sure other enabled functions don't affect output parameters.</p> <p>Make sure DVI interface is properly connected to DVI cable.</p>
Pictures are displayed abnormally.	<p>Check the input channels of each screen to make sure these channels have input signals and the signals are displayed normally.</p> <p>Make sure the parameters of each screen are set correctly.</p>
The fade is abnormal.	<p>Make sure the channel to be accessed has input signal.</p> <p>Make sure output settings are correct.</p> <p>Make sure the input source before switching and the source after switching belong to same signal group.</p>
Abnormal display	Make sure the processor is properly connected.

	<p>Make sure parameter settings of the processor are correct.</p> <p>Make sure the input signal is normal.</p>
--	--