

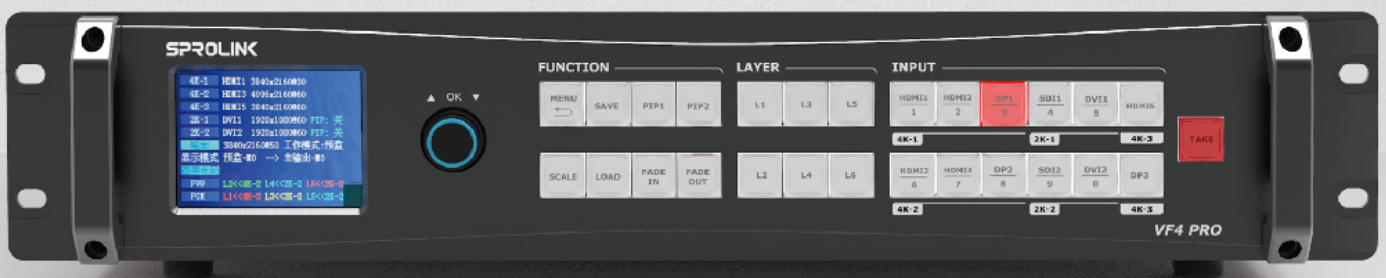
SPROLINK®

www.sprolink.com

4K@60Hz Inputs and Outputs

4K@60Hz 4:4:4 10bit Processing

Multiple Operation Mode for 4K Solution



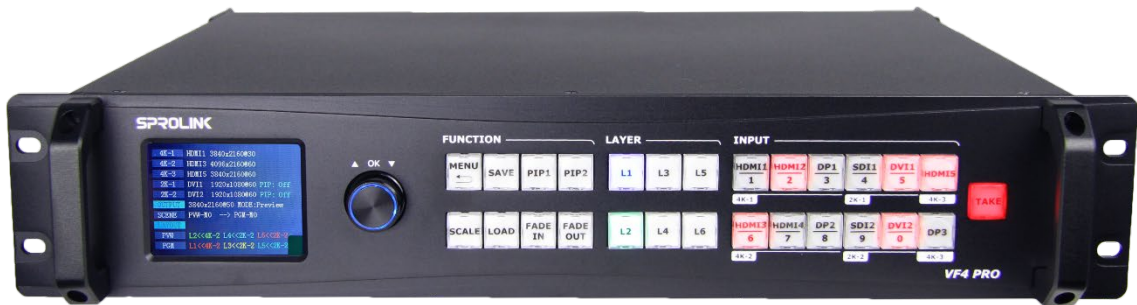
VF4 PRO

USER MANUAL

Content

1. Product Features	2
2. Product Introduction	3
3. Hardware Overview	4
3.1 Front Panel	4
3.2 Back Panel.....	6
4. Operations.....	8
4.1 Output Format	8
4.2 Quick Split.....	11
4.3 Layer Settings	12
4.4 Transition	14
4.5 PIP Setting	16
4.6 Image Quality	16
4.7 Monitoring.....	16
4.8 Save & Load	17
4.9 System.....	17

1. Product Features



- Inputs modular design covers various necessities
- HDMI2.0 DP1.2 and 4K@60Hz inputs with downward capacity
- Dual-Channel HDMI2.0 4K@60Hz Output
- Display up to 6 layers
- Fade in Fade out switching between any input channel
- 4 operation mode for various 4K solution
- Flexible image quality adjustment
- Cascade split with strict synchronization
- Flexible image quality adjustment

2. Product Introduction

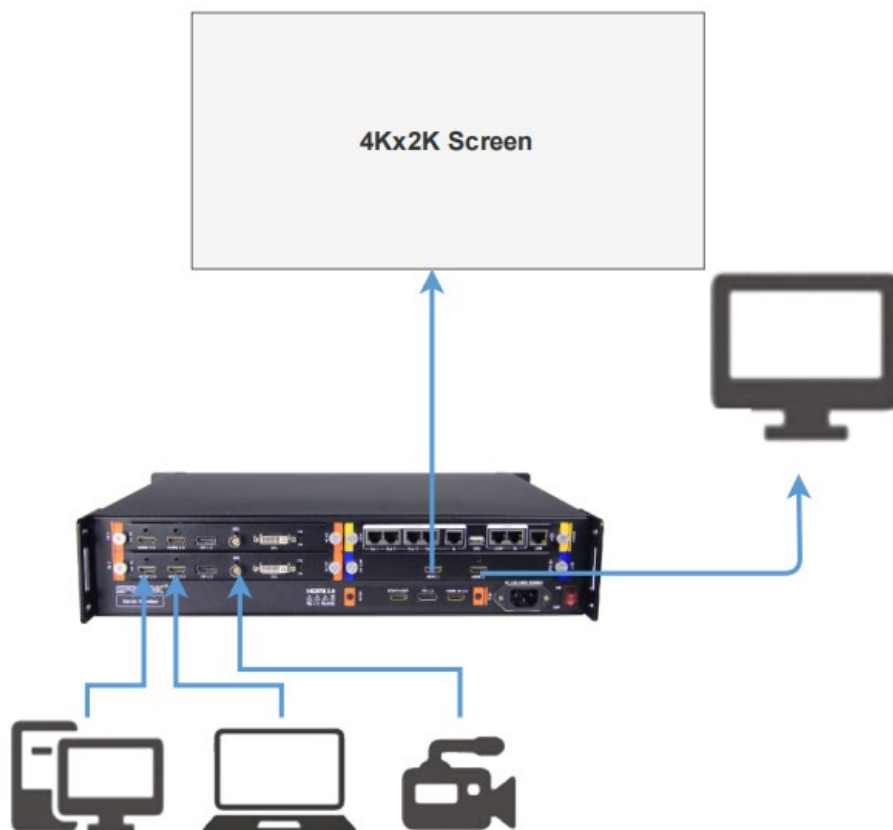
VF4 PRO is a fully modular 4K signal seamless switcher and splicing processor. It inherits the superior performance of VF4, can support 2-Channels HDMI 2.0 output independent control or splicing.

With the advanced SPROLINK technology, VF4 PRO can support 4 working mode to make the full use of output capacity, which can cope with various 4K display application requirements.

Supporting up to 6 UHD inputs and 4 traditional 2K signal inputs. Realizing perfect fade in fade out transition between any input channel.

It is one of the high-end 4K video processors for broadcast display and large scale small pitch display solution.

VF4 PRO System Diagram



3. Hardware Overview

3.1 Front Panel

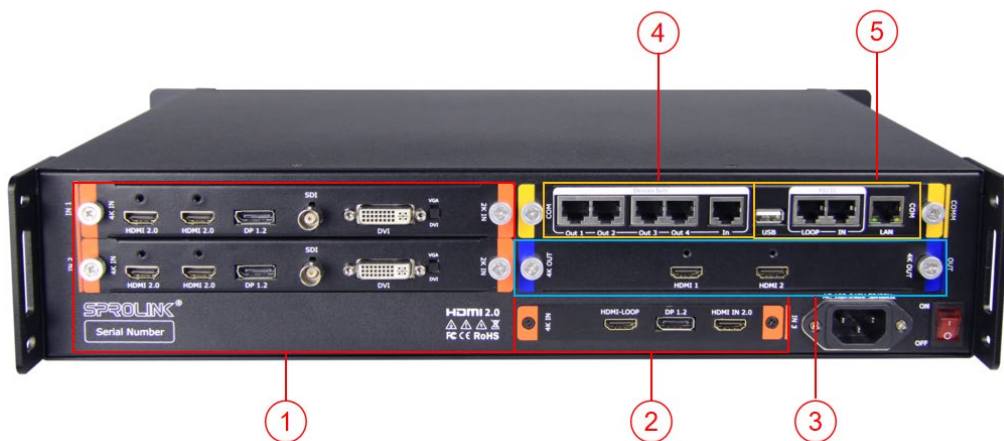


1	<p>OLED Display:</p> <p>Displays current status of the device, and provides interactive choices in conjunction with buttons on the front panel.</p>
2	<p>Knob:</p> <p>For menu selections and confirmation.</p>
3	<p>Menu Button:</p> <p>Menu and return previous page button</p> <p>Used for entering into MENU and corresponding Menu function.</p> <p>Repress the MENU will come back to previous Menu.</p>
4	<p>Scale:</p> <p>Shortcut for layer setting. Press SCALE button to enable layer setting.</p> <p>Choose specific layer button to configure layer parameters.</p>

5	<p>Save & Load:</p> <p>Save layer settings to current working mode. Press SAVE numeric button will be lighted. The settings on each working mode will be saved automatically. Use Load button to recall layer setting.</p>
6	<p>PIP:</p> <p>Shortcut for 2k-1/2K-2 input PIP setting.</p>
7	<p>Fade in & Fade out:</p> <p>Push Fade in/out button. Choose specific layer to enable fade transition. Fade Out will set layer to the top. Fade in will take layer to the bottom.</p>
8	<p>Layer button:</p> <p><i>Standard Mode:</i></p> <p>L1 & L2 is 4K layer. Choose 4K-1 & 4K-2 & 4K-3 as input channel. L3 & L4 is 2K layer. Choose 2K-1 & 2K -2 as input channel.</p> <p><i>Switcher Mode:</i></p> <p>PRE: L2 is 4K layer. Choose 4K-1 & 4K-2 & 4K-3 as input channel. L4 & L6 is 2K layer. Choose 2K-1 & 2K -2 as input channel.</p> <p>PGM:L1 is 4K layer. L3 & L5 is 2K layer.</p> <p><i>Split Mode:</i></p> <p>L1 & L2 is 4K layer for 8K background split. Choose 4K-1 & 4K-2 & 4K-3 as input channel. L3 & L4 is 2K layer. Choose 2K-1 & 2K -2 as input channel.</p> <p><i>Independent Mode:</i></p> <p>L1 & L3 is on Channel 1. L1 is 4K Layer L3 is 2K layer. L1 & L3 is on Channel 1. L1 is 4K Layer L3 is 2K layer. Enable layers and choose specific layer for layer configuration</p>

9	<p>4K-1:</p> <p>Used for 4K input switching on 4K input module 1.</p>
10	<p>4K-2:</p> <p>Used for 4K input switching on 4K input module 2.</p>
11	<p>2K-1:</p> <p>Used for 2K input switching on 2K input module 1. 2K input module support input PIP on 2K layer.</p>
12	<p>2K-2:</p> <p>Used for 2K input switching on 2K input module 2. 2K input module support input PIP on 2K layer.</p>
13	<p>4K-3:</p> <p>Used for 4K input switching on 4K input module 3. Module3 is for cascade split for multiple VF4 PRO.</p>
14	<p>TAKE:</p> <p>Trigger the smooth transition from PRE to PGM.</p>

3.2 Back Panel



①&② Input Module

Support 5 x Input Module in Maximum. (2 x 4K Module +1 x 4K Module for cascade+2 x 2K Module)

Connectors on Input Module

4K	<p>HDMI 2.0 x 2</p> <p>Support 3840*2160@60Hz 3840*2160@30Hz and 4K*1K\2K*1K input;</p> <p>DP 1.2 x 1</p> <p>Support 3840*2160@60HZ 3840*2160@30HZ and 4K*1K\2K*1K input</p>
4K	<p>For cascade splicing</p> <p>HDMI 2.0 x 2</p> <p>Support 3840*2160@60Hz 3840*2160@30Hz and 4K*1K\2K*1K input;</p> <p>HDMI 2.0 Loop</p> <p>Support HDMI 2.0 Input loop through</p> <p>DP 1.2 x 1</p> <p>Support 3840*2160@60HZ 3840*2160@30HZ and 4K*1K\2K*1K input</p>
2K	<p>3G-SDI x 1</p> <p>SD-SDI HD-SDI 3G-SDI Standard.</p> <p>Support deinterlacing</p> <p>Support Long-line automatic equalization(100m)</p> <p>DVI x 1 (Compatible with VGA)</p> <p>Support HDMI 1.3 / DVI 1.0 input, HDCP compatible VESA Standard. Support max.1920x1200@60Hz.</p>

	If have VGA source please adjust dial switch to VGA and add DVI-VGA adapter.
--	--

③ Output Module

Support 2 x HDMI2.0 Outputs.

Supported Resolution:3840x2160@50Hz/60Hz

Synchronization signal for multi-device cascade splicing

③ Control Interface

LAN : Support TCP/IP network control

USB : Support USB port control

RS232: Use RS232-RJ45 for RS232 control

4. Operations

- Output Format
- Quick Split
- Layer Settings
- Transition
- PIP Settings
- Image Quality
- Monitoring
- Save & Load
- System

4.1 Output Format

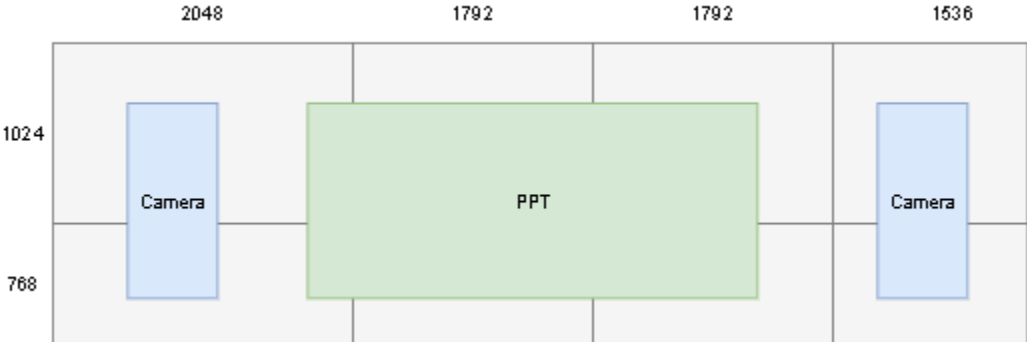
VF1 PRO provide several standard output format, covered both 50Hz and 60Hz resolution. When set the output resolution all output will share a same output

format. Please set output resolution according to the highest resolution screen.

Eg.

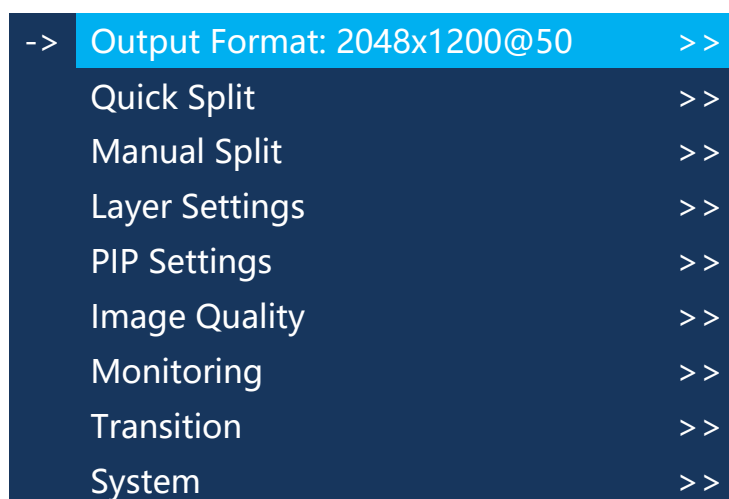
Screen Resolution :7168x1792

Split Mode: 2x4 Mapping



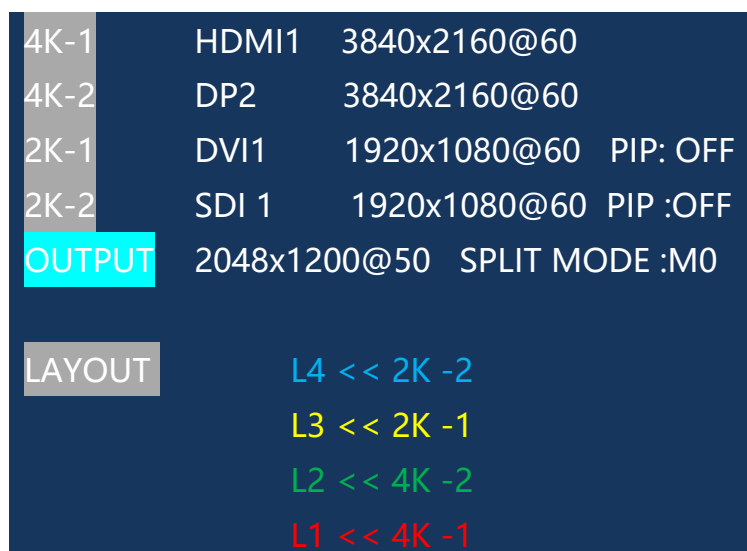
From the configuration, the biggest part for the screen is 2048x1024. Then output resolution need no less than 2048x1024.

- 1) Push MENU, go to output format. Choose 2048x1200@50Hz on Output Format List. Click Knob to confirm. After setting the device will go back to main page. The new output resolution will be shown on display.



Note: Data will reset after changed output format.

- 2) After setting the device will go back to main page. The new output resolution will be shown on display.

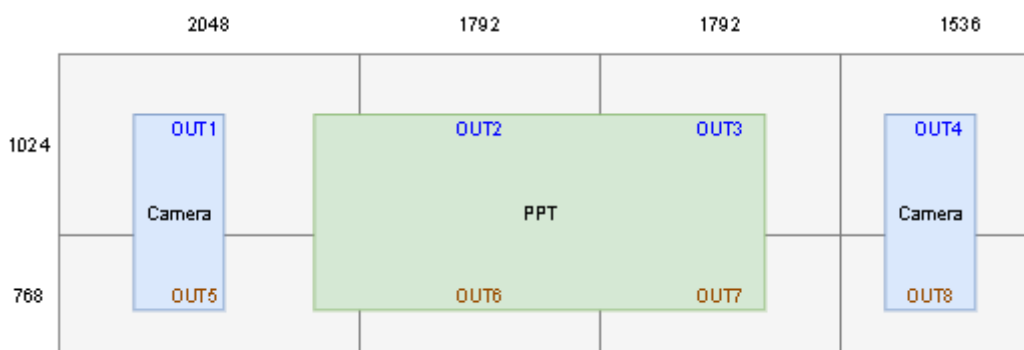


4.2 Quick Split

VF1 PRO support quick split. Make port mapping as simple as possible. The default mapping port is from DVI1 to DVI 4 from Module 1 to Module 2.

Just need to set screen resolution and several related parameters. VF1 PRO will do mapping automatically.

Eg



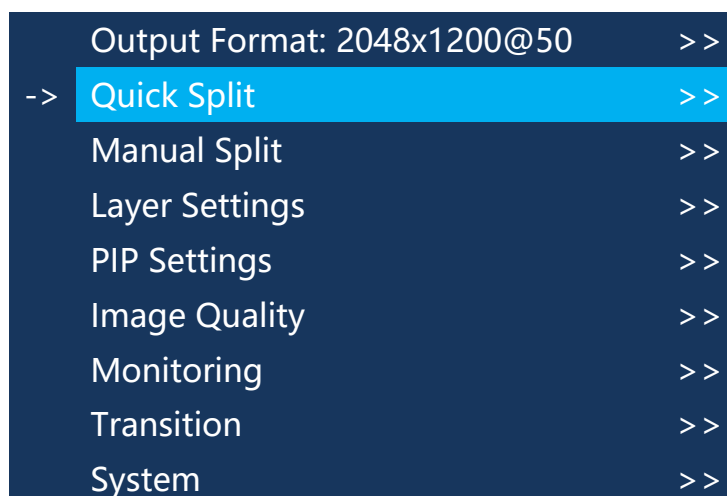
OUT1-OUT4 -> Output Module 1

OUT5-OUT8 -> Output Module 2

1) Push MENU go to Quick Split. Set Related parameters on Quick Split Menu.

Here is Unequal Split (Each part of screen resolution is not the same).

8 Output port mapping as 2 x 4.



Quick Split	
Display No.	1
Split Type	Unequal Split
-> Row	2
Column	4
H Total	2048
V Total	1200
Save To Port	

- 2) The required parameters will show automatically. Fill in the related parameters and click Save To Port to apply settings.

Quick Split	
Display No.	1
Split Type	Unequal Split
Row	2
Column	4
H Total	7168
V Total	1792
-> Width 1: 2048 2: 1792 3: 1792	
Height 1: 1024	
Save To Port	

Note: Menu will change according to Split Type & Row & Column

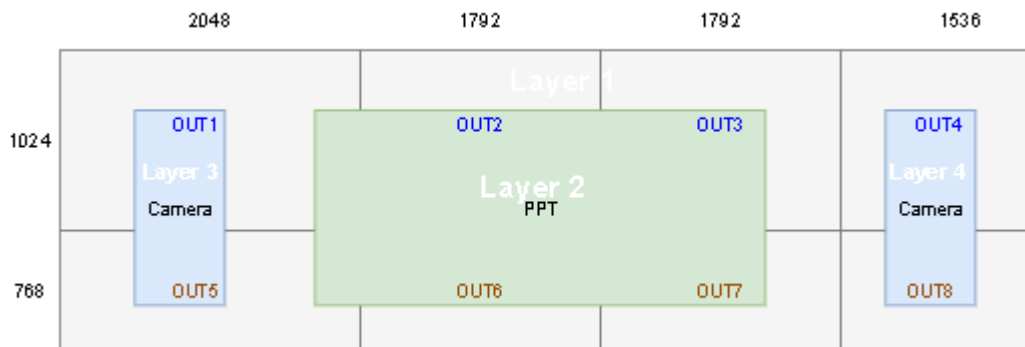
4.3 Layer Settings

VF1 PRO support 4 x layers with extra 2 x PIP windows (4+2). Here we only consider Layer settings.

Layer 1& Layer 2 is for 4K input (HDMI2.0 x 2 +DP1.2)

Layer 3& Layer 4 is for 2K input (DVI + SDI)

Eg.



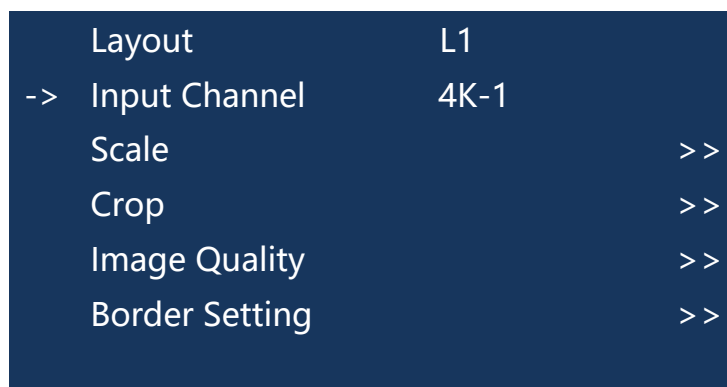
1) Layer button (L1-L4) can indicate the current layer settings.

Layer Closed the button will be OFF.

Layer Opened the button will be Lighted.

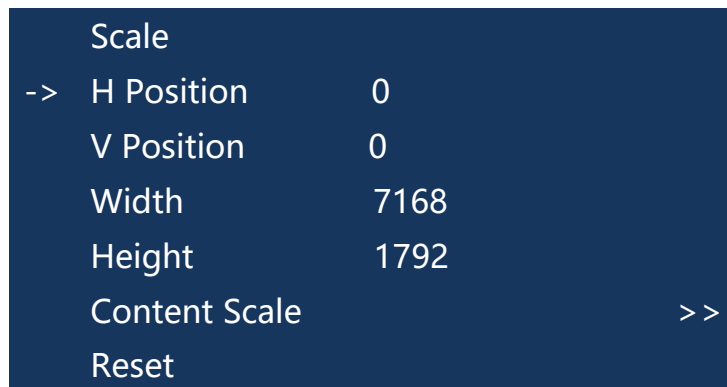
Layer Chosen the button will be blinking.

Push Layer button to enable layers and choose layer for layer setting. Here choose L1.



2) For L1 & L2 the input channel can be 4K-1/4K-2. Push knob to arrange proper input channel.

3) Go to scale menu or Push Scale to adjust layer size. Push knob to enter the setting, the numeric button will be lighted. Can use the numeric button or roll the knob to set scale parameters.



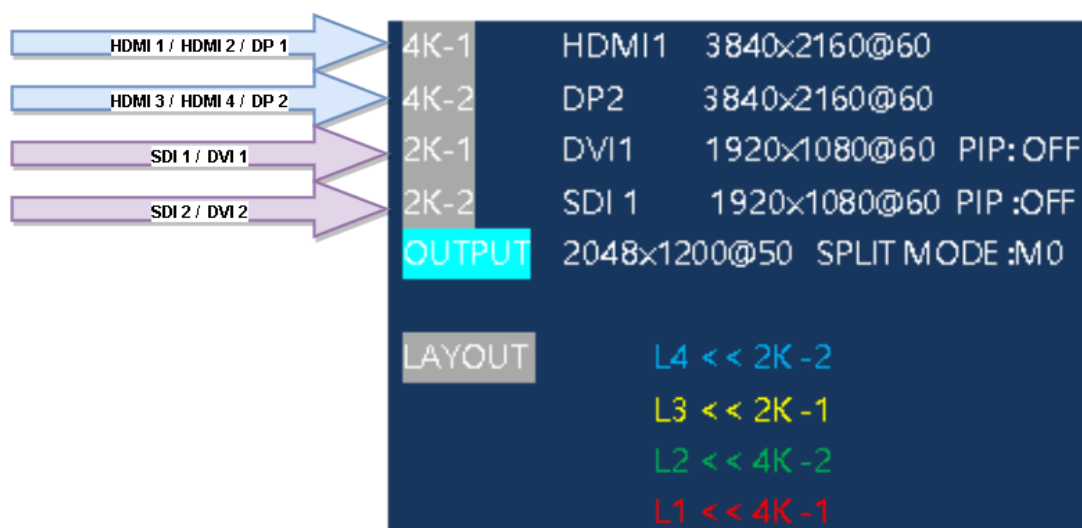
4) VF1 PRO also support layer crop/ image quality adjustment/ boarder setting.

4.4 Transition

VF1 PRO support seamless switching between input channel and layers.

Input Channel Switching

1) Exit all the current settings and back to main display. The current input channels will be listed on the display. If the input has been detected the display will show the resolution and the input button will be lighted. (If no input detected, Input button will blinking)

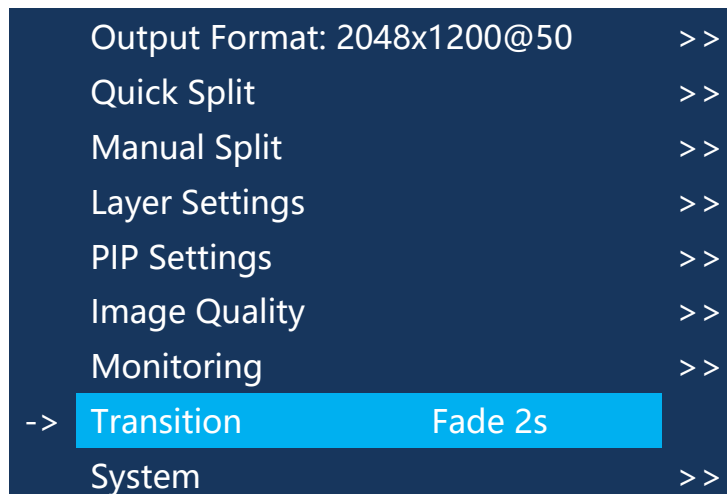


Note: Switching Input channel within input module will take 1-2s to proceed.

2) Push other input button to switch signal.

Layer Switching

1) Layer Switching support cut/Fade 1s/Fade 2s/Fade 3s. Push MENU, go to Transition Item to set the transition mode.



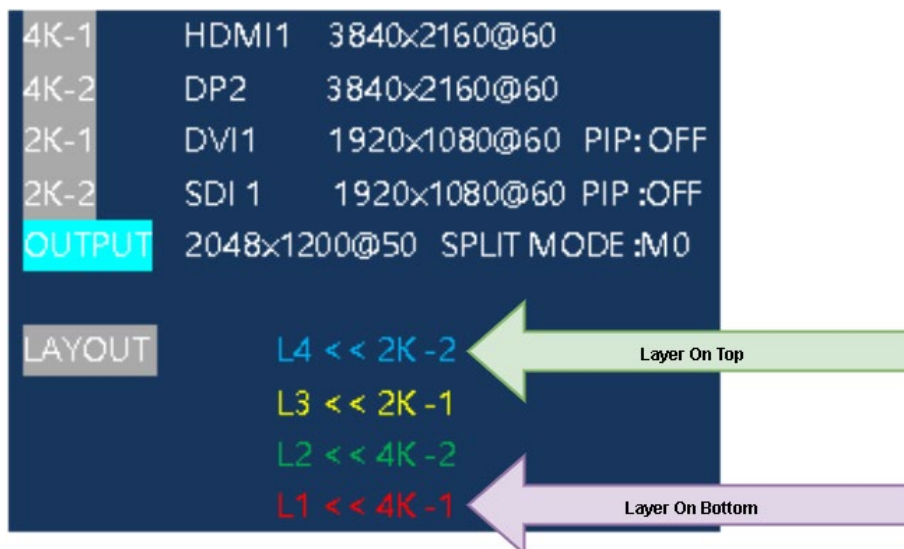
2) Go back to main screen. Push Fade In / Fade Out button to set Fade Mode.

Fade In -> Choose Layer to fade to bottom.

Fade Out -> Choose Layer to fade to top.

Choose the layer to enable fade action.

3) The Layout on main display will also response the fade action.



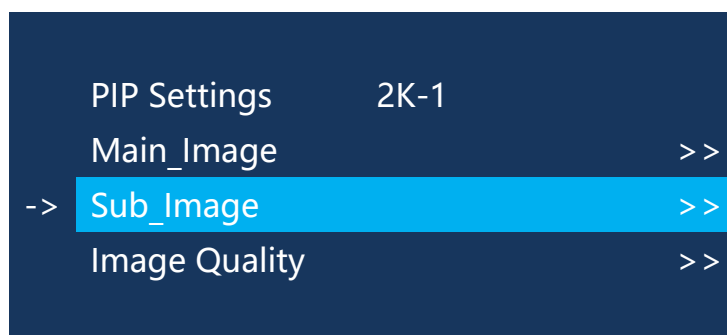
4.5 PIP Setting

Layer 3 and Layer 4 on VF1 PRO support PIP to display extra windows in layers.

- 1) Push PIP1/PIP2 button to enable PIP on 2K-1 or 2K-2 channel.

The current input channel will be the main image. Push other input button to arrange input channel for sub image.

- 2) Push PIP button to enter PIP setting menu. Set the proper scale size for Main_Image and Sub_Image.



4.6 Image Quality

VF1 PRO support image quality adjustment by Layer or Out. If need adjustment the image quality parameters in layer please go to Layer settings.

If need adjust the parameters by specific output, please choose the output and adjust parameters accordingly.

4.7 Monitoring

VF1 PRO can monitoring all outputs by single port. After finished the split setting. Push MENU choose Monitoring to arrange empty port to view all image on single output.

The default setting is monitoring all content. If only need to view a specific part please adjust the parameters accordingly.

->	Monitor Port	DVI8
	Content_H Start	0
	Content_V Start	0
	Content Width	3840
	Content Height	2160

Note: Active empty port for monitoring

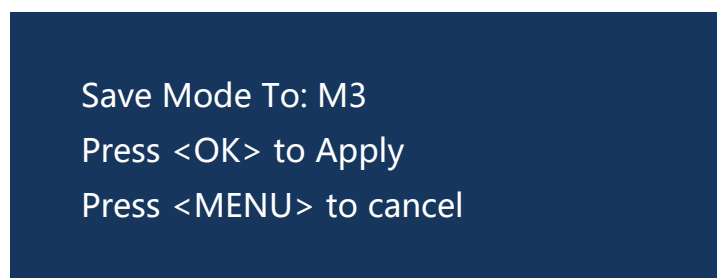
4.8 Save & Load

VF1 PRO support up to 10 mode for save and load. (From Mode0-Mode9)

Please noted that all the settings on current save mode will be saved automatically. Save Mode 0 is the default mode for configuration.

Save

- 1) Push Save button, the empty save mode will be lighted. Choose an empty numeric button to save the setting. Push knob to confirm.



- 2) After saved complete the corresponding numeric button will be lighted.

Load

Push Load button, the saved numeric button will be lighted. Choose button to load settings.

4.9 System

System Menu is for key board lock, change language, set communication parameters to for software or API control, check system info and factory reset.