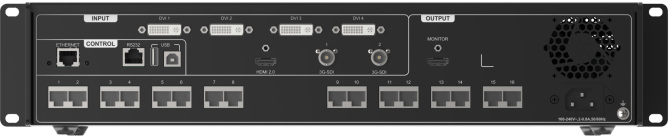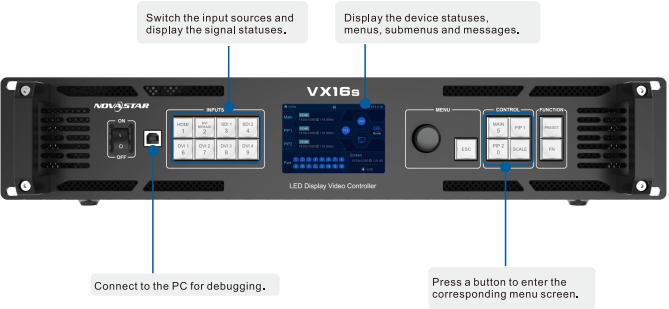# 1 Introduction

The VX16s is NovaStar's all-in-one controller that integrates video processing capabilities with sending card functions.

The VX16s provides a variety of input connectors and sixteen Ethernet outputs. At most seven input connectors can be used for input simultaneously.

Thanks to 4K×2K@60Hz Ultra HD inputs and outputs, excellent video signal processing capabilities and large loading capacity, the VX16s is well suited for stage control systems, conference sites, activities, exhibition sites and other high-end rental applications as well as fine-pitch LED displays.


Switch the input sources and display the signal statuses.

Display the device statuses, menus, submenus and messages.

Connect to the PC for debugging.

Press a button to enter the corresponding menu screen.

Input		
Connector	Qty	Description
3G-SDI	2	Max. input resolution: 1920×1080@60Hz Support for interlaced signal input and deinterlacing processing

Input		
Connector	Qty	Description
DVI	4	Single link DVI connector Max. input resolution: 1920×1200@60Hz Support for custom resolutions Max. width: 3840 pixels, max. height: 3840 pixels HDCP 1.4 compliant Four DVI sources can form a new input source, that is DVI MOSAIC.
HDMI 2.0	1	Max. input resolution: 3840×2160@60Hz Support for custom resolutions Max. width: 3840 pixels, max. height: 3840 pixels HDCP 2.2 and EDID 1.4 compliant

Output		
Connector	Qty	Description
Ethernet port	16	Gigabit Ethernet output port 16 ports load up to 10,400,000 pixels in total, with the max. width of 16384 pixels and max. height of 8192 pixels. Max. loading capacity of a single port: 650,000 pixels
MONITOR	1	HDMI connector for output monitoring Output resolution: 1920×1080@60Hz

| Control		
Connector	Qty	Description
ETHERNET	1	Connect to the PC for communication.
USB (Type-B)	1	Connect to the PC for debugging. Input connector to link another VX16s unit
USB (Type-A)	1	Output connector to link another VX16s unit
RS232	1	Connect to the central control device.

2 Applications

1 device unit loads an LED screen independently.
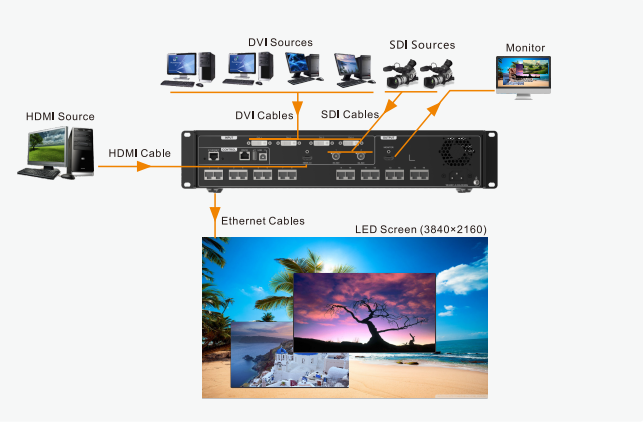
1 × DVI MOSAIC (3840×2160@60Hz) + 2 × SDI
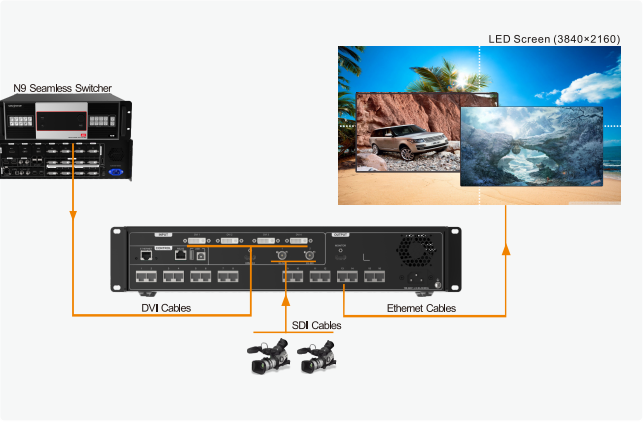
3 Operations

Basic operations of the VX16s include configuring screens, adding layers, setting presets and image mosaic.

Quick Configuration

Prerequisites

- LED screen must be a regular screen.
- Cabinets of the screen must be regular cabinets with the same resolution.
- The following data flow patterns are supported. The physical connection of each Ethernet port must be along the same direction and downward to next one.

- The Ethernet Port 1 must be at the beginning position of the whole physical connection.

Procedure

Step 1 Power on the LED screen.

Step 2 On the home screen, press the knob to enter the main menu screen. Then rotate the knob to select **Screen Settings** > **Quick Configuration** to enter the quick configuration screen.

Step 3 Set **Cabinet Row Qty** and **Cabinet Column Qty** according to the actual row and column quantities of the cabinets.
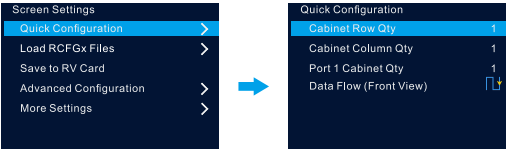
Step 4 Rotate the knob to select **Port 1 Cabinet Qty** to set the quantity of the cabinets loaded by Ethernet port 1.

🔊 **Notes**

- The quantities of the cabinets loaded by Ethernet ports 1-15 must be the same, which must be greater than that loaded by Ethernet port 16.
- The quantity of cabinets loaded by each Ethernet port must be an integer multiple of **Cabinet Row Qty** or **Cabinet Column Qty** of the screen.

Step 5 Rotate the knob to select **Data Flow (Front View)** and press it, then select an appropriate physical connection mode for the cabinets.

During data flow settings, you can view the real-time effects of different data flow settings on LED display by rotating the knob. If the screen displays the images normally, that is no overlapping or repetition, press the knob to save the settings.

Adding Layers

Step 1 Press the **MAIN** button on the front panel, or rotate the knob to select **Layer Settings > Main Layer > Status > On** to add the main layer.

Step 2 On the layer settings screen, press an input source button on the front panel to switch the layer source, or select **Input Source** and rotate the knob to select an input source for the layer.

Main Layer	
Status	On
Input Source	HDMI
Backup Source	NA
Primary Source Preferred	Off
Scaling Mode	Custom
H Width	800
V Height	600
Initial X	0
Initial Y	0
Input Crop	>
Priority	3
Reset	

Main Layer	
Status	On
Input Source	HDMI
Backup Source	NA
Primary Source Preferred	Off
Scaling Mode	Custom
H Width	800
V Height	600
Initial X	0
Initial Y	0
Input Crop	>
Priority	3
Reset	
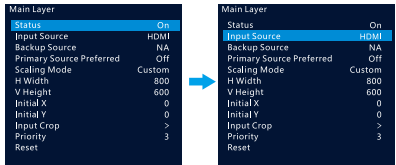
After the above operation, a layer with the selected source and the specified size is added, as shown below.

LED Screen

Main Layer

HDMI

Preset Settings

The VX16s supports 10 presets. You can save the current layer layout to a preset and load the preset as needed.

Step 1 Press the **PRESET** button on the front panel, or rotate the knob to select **Preset Settings > Preset 1** and the **Preset Operation Options** window appears.

Step 2 Rotate the knob to select **Save, Load, Clear** or **Copy To.**

Preset Settings	
1-Preset 1	Blank
2-Preset 2	Blank
3-Preset 3	Blank
4-Preset 4	Blank
5-Preset 5	Blank
6-Preset 6	Blank
7-Preset 7	Blank
8-Preset 8	Blank

Preset Settings	
1-Preset 1	Blank
2-Preset 2	Blank
Preset Operation Options	
Save Load Clear Copy To	
7-Preset 7	Blank
8-Preset 8	Blank

- Save the current layer layout to the selected preset.
- Load the selected preset.
- Clear the layer layout in the current preset.
- Copy the layer layout in the current preset to the selected preset.

Save to Preset 1

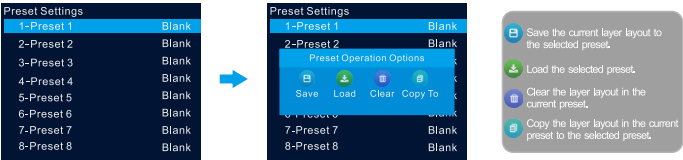| Preset Settings	
1-Preset 1	Blank
2-Preset 2	Blank
3-Preset 3	Blank
4-Preset 4	Blank
5-Preset 5	Blank
6-Preset 6	Blank
7-Preset 7	Blank
8-Preset 8	Blank

Image Mosaic

If the LED screen size is 7680×4320, four VX16s units are required to load the screen. The size and position of each load area are shown as follows.

LED Screen (7680×4320)

2   1
3   4

Image Mosaic	
Status	On
Total H Pixels	7680
Total V Pixels	4320
Load Area Width	3840
Load Area Height	2160
Load Area Initial X	0
Load Area Initial Y	0

Device No.	Load Area Width	Load Area Height	Load Area Initial X	Load Area Initial Y
VX16s - 1	3840	2160	3840	0
VX16s - 2	3840	2160	0	0
VX16s - 3	3840	2160	0	2160
VX16s - 4	3840	2160	3840	2160

VX16s
All-in-One Controller

Quick Start Guide