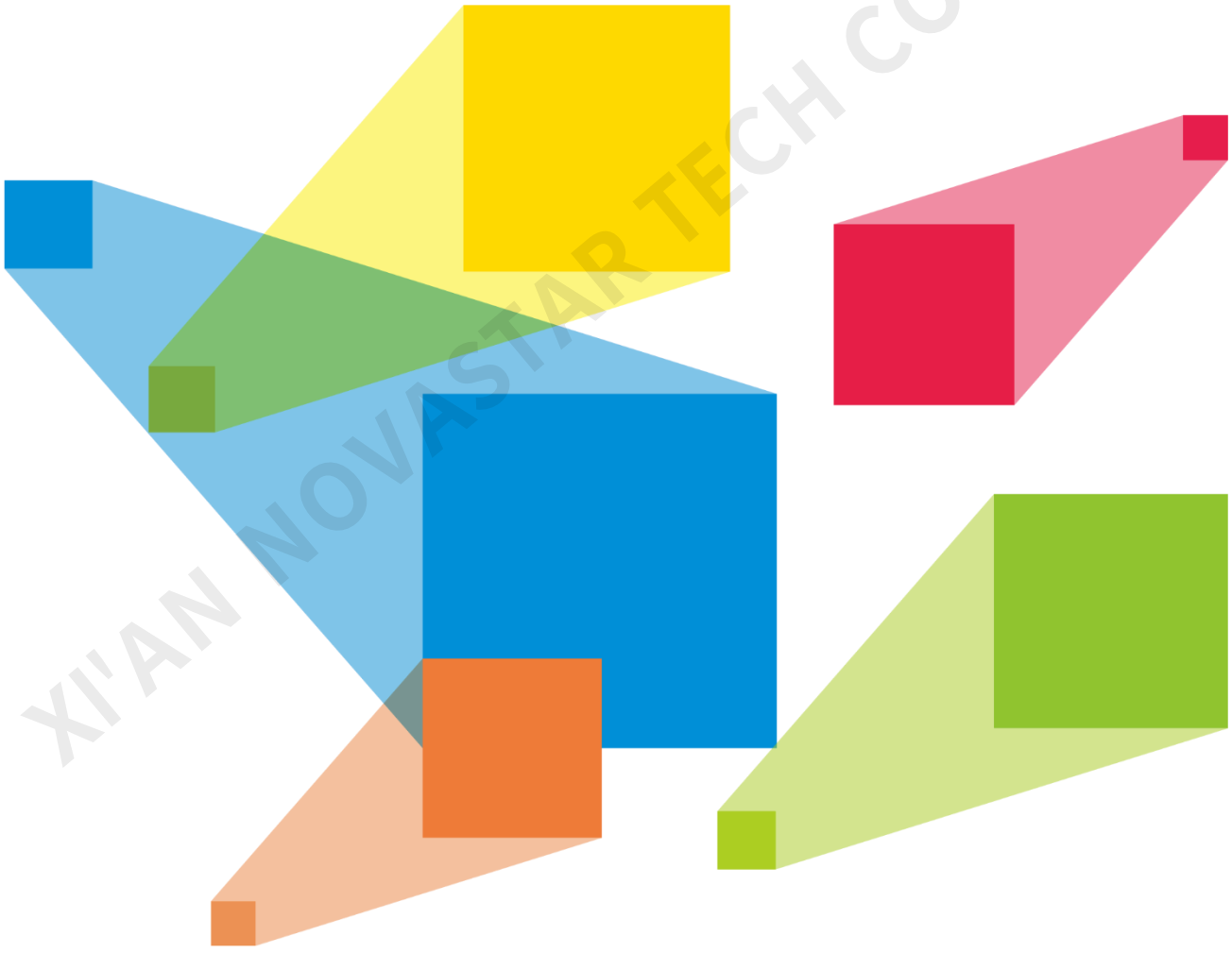
VX16s

All-in-One Controller

V1.0.0



User Manual

Change History

Document Version	Firmware Version	Release Date	Description
V1.0.0	V1.0.0.0	2020-06-16	First release

Contents

1 Overview

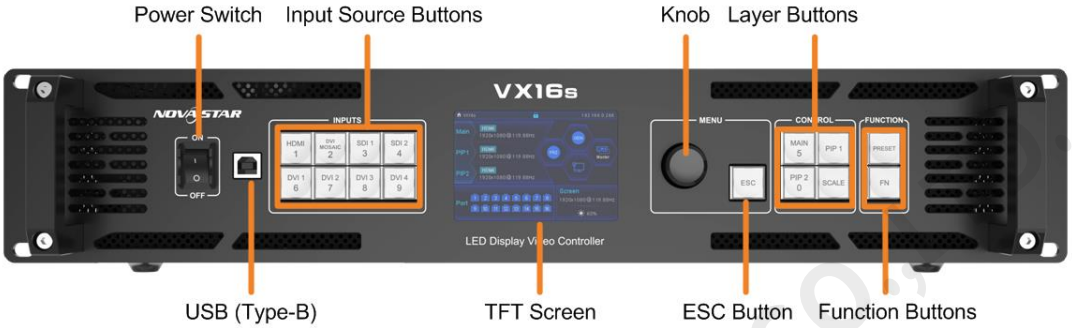
The VX16s is NovaStar's new all-in-one controller that integrates video processing, video control and LED screen configuration into one unit. Together with NovaStar's V-Can video control software, it enables richer image mosaic effects and easier operations.

The VX16s supports a variety of video signals, Ultra HD 4K×2K@60Hz image processing and sending capabilities, as well as up to 10,400,000 pixels.

Thanks to its powerful image processing and sending capabilities, the VX16s can be widely used in applications such as stage control systems, conferences, events, exhibitions, high-end rental and fine-pitch displays.

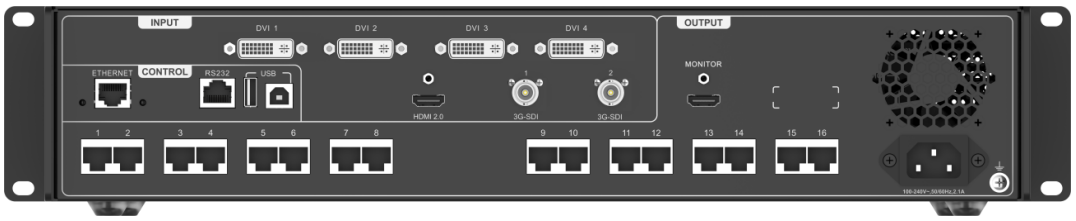
2 Appearance

2.1 Front Panel



Type	Description
Power switch	Power on or power off the device.
USB (Type-B)	Connect to the control PC for debugging.
Input source buttons	On the layer editing screen, press the button to switch the input source for the layer; otherwise, press the button to enter the resolution settings screen for the input source. Status LEDs: • On (orange): The input source is accessed and used by the layer. • Dim (orange): The input source is accessed, but not used by the layer. • Flashing (orange): The input source is not accessed, but used by the layer. • Off: The input source is not accessed and not used by the layer.
TFT screen	Display the device status, menus, submenus and messages.
Knob	• Rotate the knob to select a menu item or adjust the parameter value. • Press the knob to confirm the setting or operation.
ESC button	Exit the current menu or cancel the operation.
Layer buttons	Press a button to open a layer, and hold down the button to close the layer. • MAIN: Press the button to enter the main layer settings screen. • PIP 1: Press the button to enter the settings screen for PIP 1. • PIP 2: Press the button to enter the settings screen for PIP 2.SCALE: Turn on or turn off the full screen scaling function of the bottom layer.
Function buttons	• PRESET: Press the button to enter the preset settings screen. • FN: A shortcut button, which can be customized as a shortcut button for Synchronization (default), Freeze, Black Out, Quick Configuration or Image Color function

2.2 Rear Panel



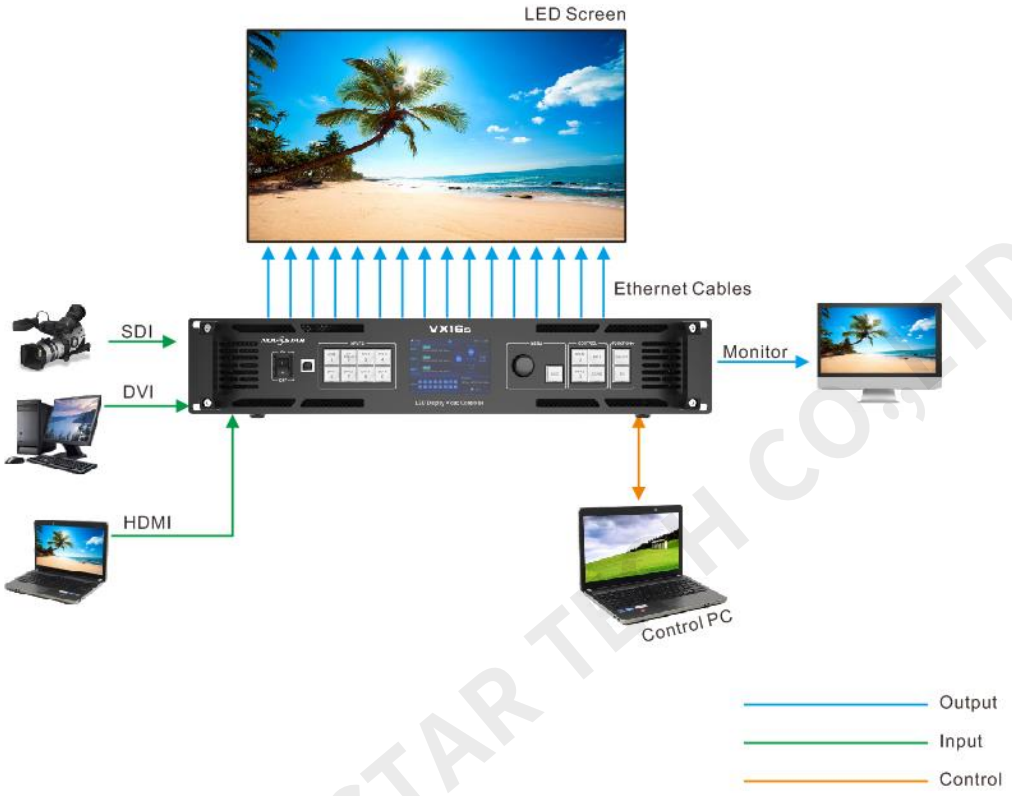
Inputs		
Connector	**Qty**	**Description**
3G-SDI	2	• Max. input resolution: Up to 1920 × 1080@60Hz • Support for interlaced signal input and deinterlacing processing • DOES NOT support input resolution settings.
DVI	4	• Single link DVI connector, with max. input resolution up to 1920 × 1200@60Hz • Four DVI inputs can form an independent input source, which is DVI Mosaic. • Support for custom resolutions - Max. width: 3840 pixels - Max. height: 3840 pixels • HDCP 1.4 compliant • DOES NOT support interlaced signal input.
HDMI 2.0	1	• Max. input resolution: Up to 3840 × 2160@60Hz • Support for custom resolutions - Max. width: 3840 pixels - Max. height: 3840 pixels • HDCP 2.2 compliant • EDID 1.4 compliant • DOES NOT support interlaced signal input.
Outputs		
Connector	**Qty**	**Description**
Ethernet port	16	• Gigabit Ethernet output • 16 ports load up to 10,400,000 pixels. - Max. width: 16384 pixels - Max. height: 8192 pixels • A single port loads up to 650,000 pixels.
MONITOR	1	• An HDMI connector for monitoring output

		• Support for resolution of 1920 × 1080@60Hz
Control		
Connector	**Qty**	**Description**
ETHERNET	1	• Connect to the control PC for communication. • Connect to the network.
USB	2	• USB 2.0 (Type-B): - Connect to the PC for debugging. - Input connector to link another device • USB 2.0 (Type-A): • Output connector to link another device
RS232	1	Connect to the central control device.

Note:

The HDMI source and DVI Mosaic source can be used by the main layer only.

3 Applications

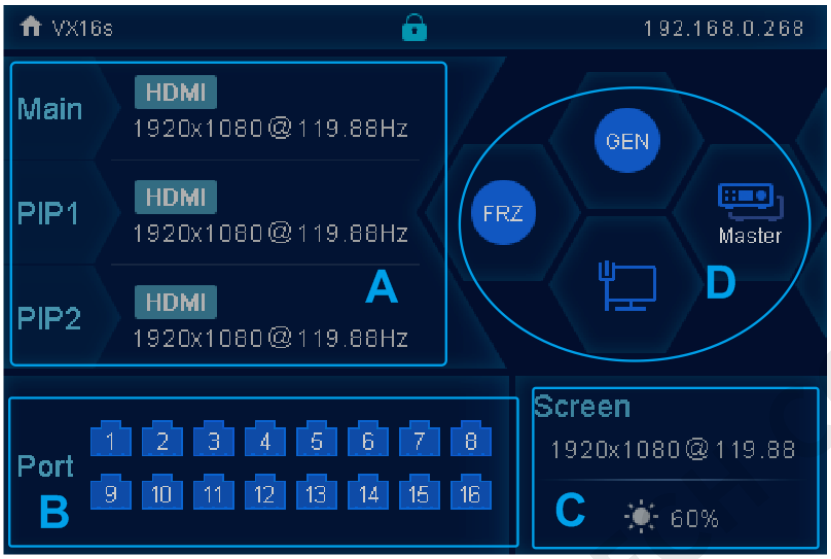


Note:

This product can only be worked horizontally. Wall mounting is not permitted.

4 Home Screen

Figure 4-1 Home screen



Area	Icon	Meaning	
A	HDMI 1920×1080@60Hz	The layer is active and the layer input source name and resolution are displayed.	
	Inactive	The layer is inactive.	
B	1	The VX16s is in video controller mode and this Ethernet port is connected.	
	1	This Ethernet port is not connected.	
	1	This Ethernet port is connected and serves as the backup output port.	
C	Screen 1920×1080@ 60Hz	Resolution and frame rate of the configured screen	
	65%	Screen brightness	
D	Synchronization	GEN	The Genlock function is turned on.
		GEN	The Genlock function is turned off.
		GEN	The Genlock function is being turned on.
		GEN	Failed to turn on the Genlock function.
	Display control		The LED screen is displaying a black screen.
		TEST	The LED screen is displaying the selected test pattern.

			The LED screen is displaying the current input source.
			The output image is frozen.
	BKG		The BKG function is turned on.
			The BKG function is turned off.
	Communication		The VX16s is communicating with the control PC via USB.
			The VX16s is communicating with the control PC via LAN.
			The VX16s is not connected to the control PC.

5 Menu Operations

Operating Instructions:

Knob:

On the home screen, press the knob to enter the main menu screen.

On the main menu screen, rotate the knob to select a menu item, and press the knob to confirm the selection or enter the submenu.

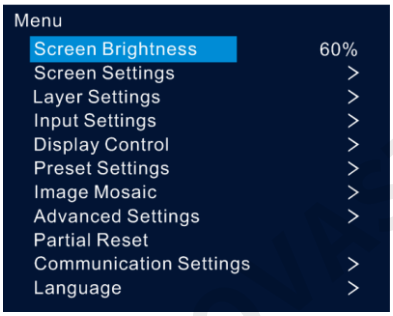
When a menu item with parameters is selected, you can rotate the knob to adjust the parameters. Press the knob again after adjustment to apply your settings.

ESC: Exit the current menu or cancel an operation.

5.1 Screen Brightness

You can adjust the screen brightness in an eye-friendly way according to the current ambient brightness. Besides, appropriate adjustment of screen brightness can extend the service life of the LED screen.

Figure 5-1 Screen brightness



Step 1 Press the knob to enter the main menu screen.

Step 2 Select **Screen Brightness** and press the knob to confirm the selection.

Step 3 Rotate the knob to adjust the brightness value. You can see the adjustment result on the LED screen in real time. Press the knob to apply the brightness when you are satisfied with it.

5.2 Screen Settings

You can configure your screen to make it display the whole image correctly.

Quick Configuration and **Advance Configuration** are provided and you can choose any of the options to configure your screen.

5.2.1 Quick configuration

Prerequisites

- The 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 the next one.

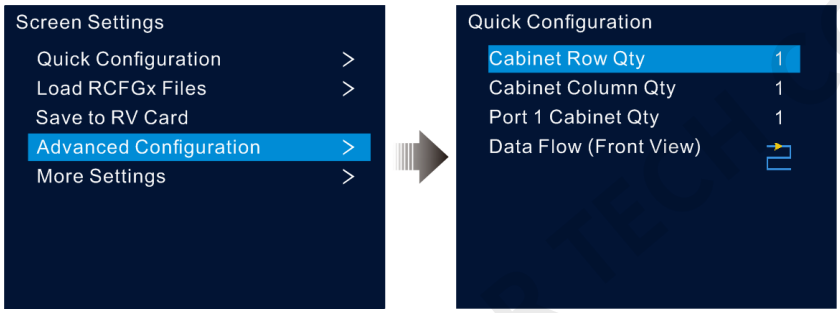
- Ethernet port 1 must be always at the beginning of the whole physical connection.

Operating 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 choose **Screen Settings** > **Quick Configuration** and press the knob to enter the quick configuration screen.

Figure 5-2 Quick configuration



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** and set the quantity of the cabinets loaded by Ethernet port 1.

Step 5 Rotate the knob to select **Data Flow (Front View)** and press the knob, then select an appropriate data flow pattern of the cabinets.

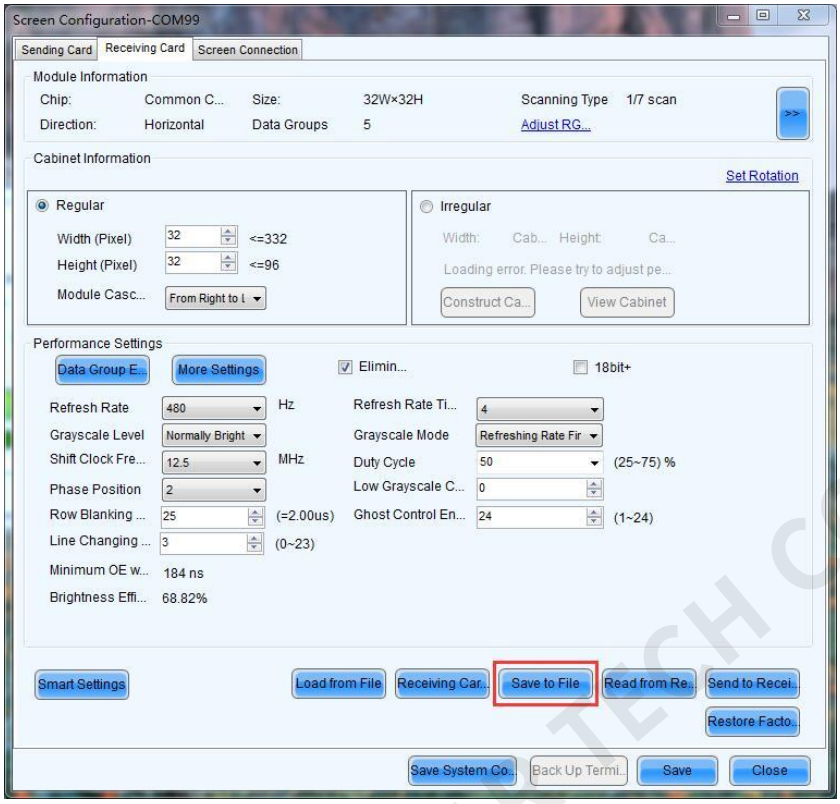
During data flow settings, you can see the result on the LED screen in real time. If the entire screen displays content correctly, that is, no overlapping or repetition, press the knob to save the settings.

5.2.2 Loading RCFGx Files

After the LED screen is powered on, if a cabinet or the entire LED screen is not lit, you can load the receiving card configuration files (namely RCFGx files) that have been configured in NovaLCT to the VX16s.

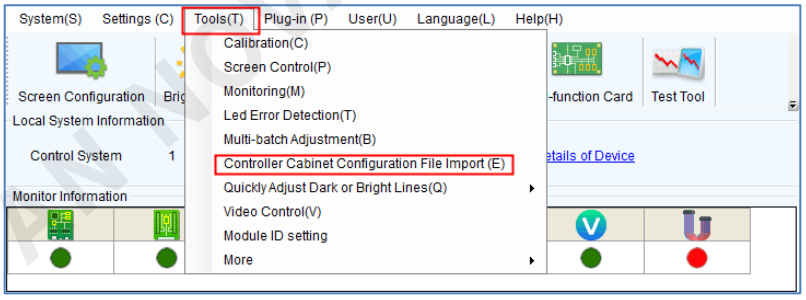
Step 1 (Optional) After you have configured the screen in NovaLCT, click **Save to File** under the **Receiving Card** tab to save the configuration file to the PC.

Figure 5-3 Saving receiving card configuration files



Step 2 Choose **Tools** > **Controller Cabinet Configuration File Import** to enter the controller cabinet configuration file importing page.

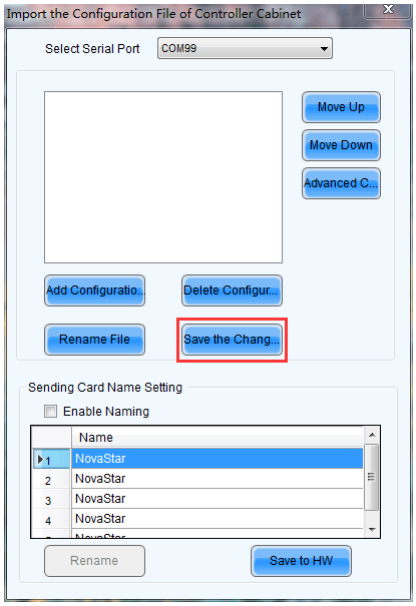
Figure 5-4 Importing controller cabinet configuration files



Step 3 Click **Add Configuration File** to select the target file (*.rcfgx/*.rcfg) from your PC, and then click **Open**.

Step 4 Click **Save the Change to HW** to send the configuration files to the VX16s.

Figure 5-5 Saving changes to the VX16s



Note:

The configuration files for irregular cabinets are not supported.

5.2.3 Save to RV Card

You can send and save the screen configuration to the receiving card. The configuration data will not be lost after the VX16s is powered off.

5.2.4 Advanced Configuration

You can set the cabinet row and column quantities, horizontal offset, vertical offset and data flow of the cabinets loaded by a single Ethernet port.

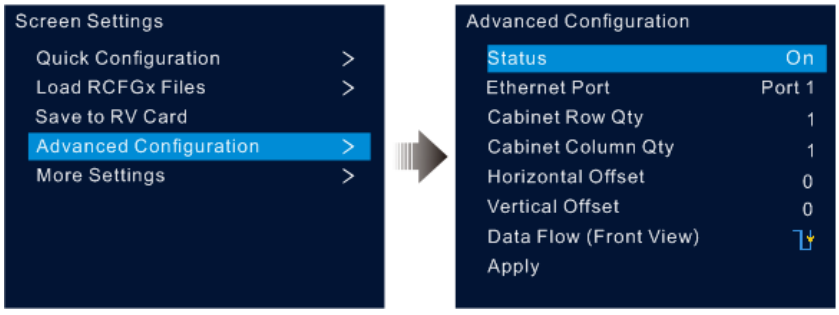
Operating Procedure

Step 1 Press the knob to enter the main menu screen.

Step 2 Rotate the knob to choose **Screen Settings** > **Advanced Configuration**, and press it to enter the advanced configuration screen.

Step 3 Turn on the advanced configuration function, and then set the cabinet row and column quantities, horizontal offset, vertical offset and data flow.

Figure 5-6 Advanced configuration



5.2.5 More Settings

Step 1 Press the knob to enter the main menu screen.

Step 2 Rotate the knob to choose **Screen Settings** > **More Settings**, and then press the knob to enter the submenu, including **Mapping** and **LED Screen Color**.

Mapping

You can turn on this function to display the sequence numbers of Ethernet ports and cabinets.

Figure 5-7 Mapping

Example: "P:05" stands for the Ethernet port number and "#001" stands for the cabinet number.

Note:

The receiving cards of the screen must support the Mapping function. You can check the types of receiving cards on NovaStar's official website (www.novastar.tech).

LED Screen Color

You can adjust the screen color and the adjustment result will be displayed on the LED screen in real time.

Table 5-1 Screen color parameters

Parameter	Description
Color Temperature	You can set the color to **Standard**, **Cool**, **Warm** and **Custom**. Custom allows you to adjust the values for R, G and B individually.
Gamma	The range is 1.0–4.0 and the stepping is 0.1.

Figure 5-8 Color temperatures

5.3 Layer Settings

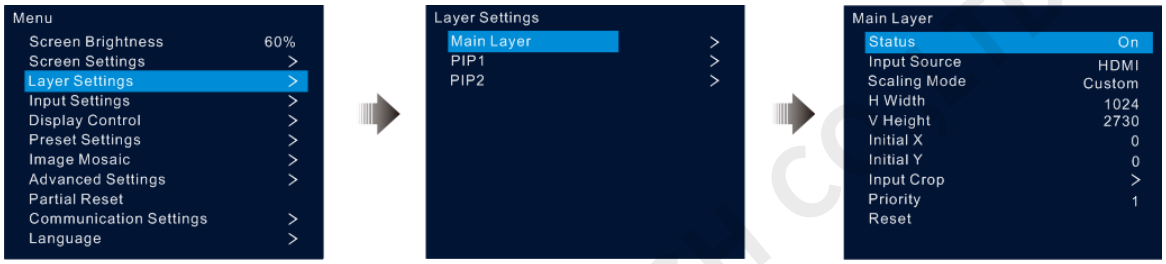
Step 1 Press the knob to enter the main menu screen.

Step 2 Rotate the knob to select **Layer Settings** and press the knob to enter the layer settings screen where you can set the following.

- Main layer
- PIP 1 and PIP 2

5.3.1 Main Layer and PIP

Figure 5-9 Layer settings



Menu	Description
Status	Open and close the current layer. Note: Press the **MAIN**, **PIP1** or **PIP2** button in the **CONTROL** area on the front panel, and the LCD screen will display the **Layer Settings** menu.
Input Source	Select an input source for the current layer. Note: The HDMI source and DVI Mosaic source can be used only by the main layer.
Scaling Mode	Three options are provided: **Full Screen**, **Pixel to Pixel** and **Custom**.
H Width	The horizontal width of the layer, with a maximum of 32,768
V Height	The vertical height of the layer, with a maximum of 32,768
Initial X	The initial horizontal coordinate of the layer
Initial Y	The initial vertical coordinate of the layer
Input Crop	Display the cropped input source. The cropped part will fill the whole layer. • Status: Turn on or turn off the input crop function for the selected layer. • H Width: The horizontal width of the cropped part, ranging from 64 to the horizontal width of the current input source • V Height: The vertical height of the cropped part, ranging from 64 to the vertical height of the current input source • Initial X: The horizontal initial coordinate of the cropped part upon the current input source • Initial Y: The vertical initial coordinate of the cropped part upon the current input source
Priority	Set the display order priority of the layer, including **1**, **2** and **3**. • 1: Send the layer to the back. • 2: Place the layer in the middle. • 3: Bring to the layer to the front.
Reset	Reset all the layer parameters to default settings.

Figure 5-10 Layer parameter description

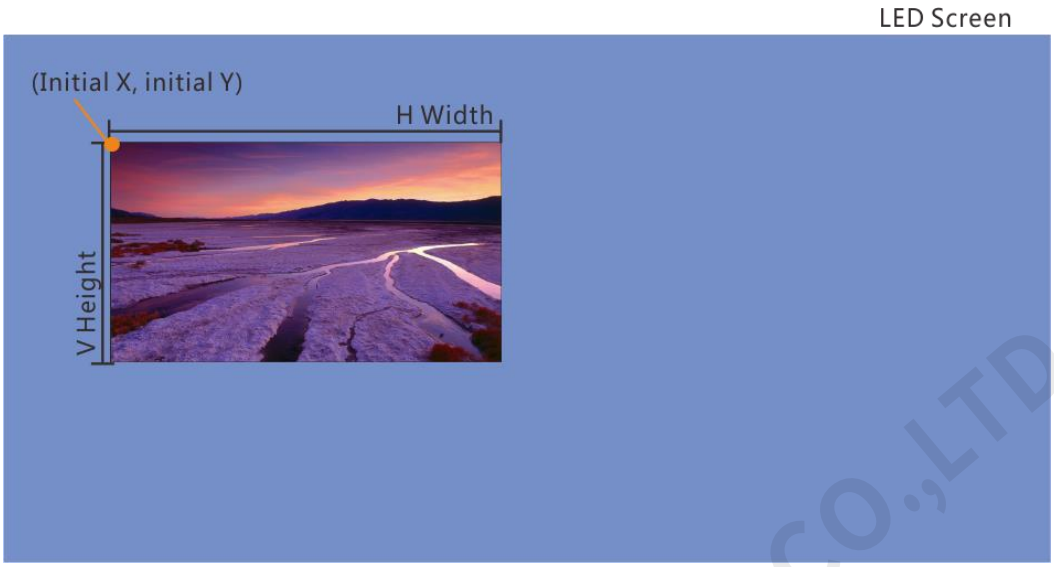
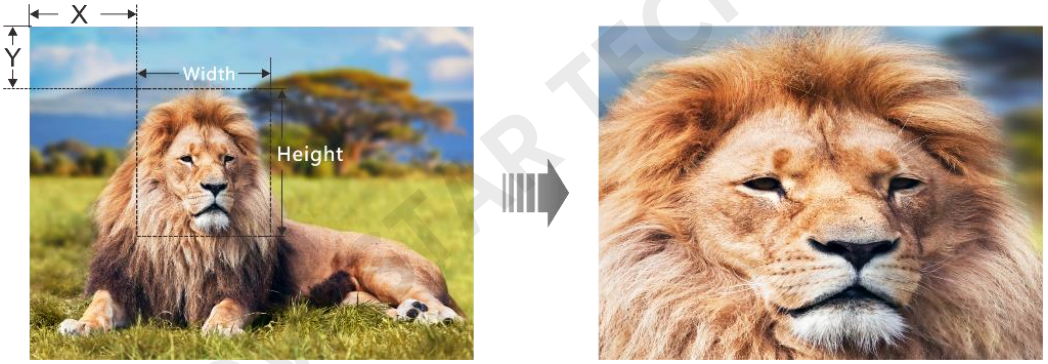


Figure 5-11 Input crop



5.4 Input Settings

5.4.1 Input Source Selection

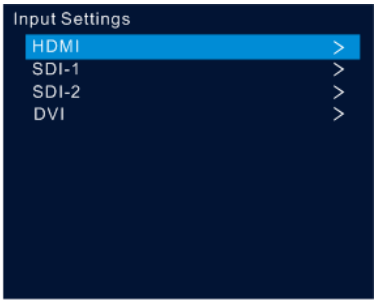
The supported input sources include HDMI, SDI and DVI.

Rotate the knob to select the desired input source and press the knob to enter the input source resolution setting screen.

Note:

Only one interlaced SDI input is supported in the mosaic mode of four DVI connectors.

Figure 5-12 Input source selection

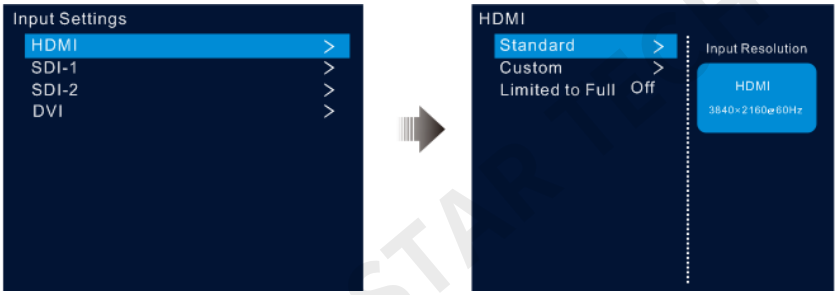


5.4.2 Input Resolution Settings

The following two methods are provided to set the input resolution:

- Standard resolution
- Custom resolution

Figure 5-13 Choosing a resolution setting method



Note:

The SDI input source does not support resolution settings.

Standard Resolution

Choose a standard resolution and frame rate. Then rotate the knob to select **Apply** and press the knob to apply your settings.

Figure 5-14 Standard resolution

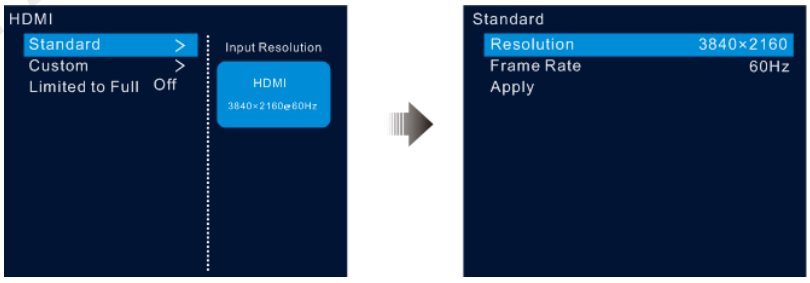


Table 5-2 Standard resolutions

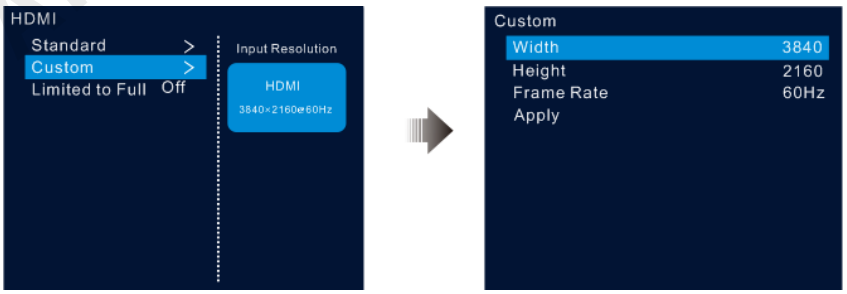
Standard Resolution	HDMI 2.0	SL-DVI
1024×768@(48/50/59.94/60/75/85)Hz	√	√

Standard Resolution	HDMI 2.0	SL-DVI
1280×720@(23.98/24/25/29.97/30/48/50/59.94/60)Hz	√	√
1280×1024@(48/50/59.94/60/75/85)Hz	√	√
1364×768@(50/59.94/60)Hz	√	×
1366×768@(50/59.94/60)Hz	×	√
1440×900@(60/75/85)Hz	√	√
1600×1200@(48/50/59.94/60)Hz	√	√
1680×1050@60Hz	√	√
1920×1080@(23.98/24/25/29.97/30/48/50/59.94/60)Hz	√	√
1920×1200@(50/59.94/60)Hz	√	√
2048×1080@(30/48/50/59.94/60)Hz	√	√
2048×1152@(30/60)Hz	√	√
2560×1080@(50/59.94/60)Hz	√	×
2560×1600@(50/59.94/60)Hz	√	×
2560×1600@120Hz	√	×
3840×1080@30Hz	√	√
3840×1080@(50/59.94/60)Hz	√	×
3840×1080@120Hz	√	×
3840×2160@(23.98/24/25/29.97/30)Hz	√	×
3840×2160@(50/59.94/60)Hz	√	×

Custom Resolution

Rotate the knob to set a custom width, height and frame rate. Then rotate the knob to select **Apply** and press the knob to apply your settings. If you do not press the knob to confirm, the settings will not take effect.

Figure 5-15 Custom resolution

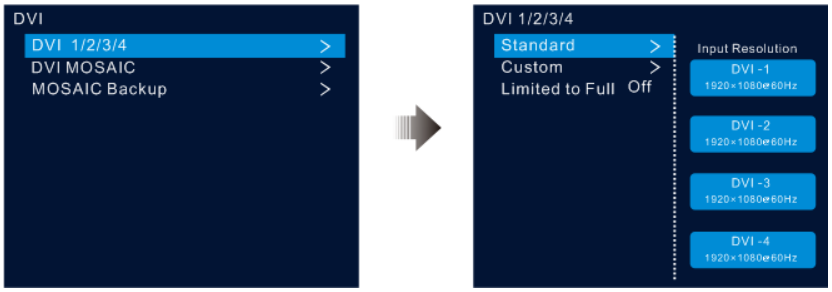


5.4.3 DVI Mosaic

Step 1 Rotate the knob to choose **Input Settings** > **DVI**.

Step 2 Adjust the resolutions of DVI 1, 2, 3 and 4 together. For the adjustment procedure, see 5.4.2 Input Resolution Settings.

Figure 5-16 DVI 1/2/3/4 resolution settings



Step 3 Rotate the knob to select **DVI MOSAIC** and press the knob to enter the DVI mosaic settings menu.

Menu	Description
Layout	Choose a mosaic layout for DVI connectors 1–4. Seven mosaic layouts are available: 
Width	Adjust the width of an individual mosaic tile. The default width is 1920 and the range is 64–3840.
Height	Adjust the height of an individual mosaic tile. The default height is 1080 and the range is 64–3840.
Layout	Specify the sequence of each DVI input of the MOSAIC source.
Apply	Select **Apply** and press the knob to make the DVI mosaic settings take effect.

Step 4 Rotate the knob to set the **MOSAIC Backup** mode.

- Part: When one or multiple DVI sources in the DVI mosaic group are abnormal, these sources are not displayed and other DVI sources are displayed normally.
- Group: When one or multiple DVI sources in the DVI mosaic group are abnormal, the backup device will take over the primary device to output the image.

Notes

- Only one interlaced SDI input is supported in the mosaic mode of four DVI connectors.
- **Mosaic Backup** is set to **Part** by default. In device backup mode, please set **Mosaic Backup** to **Group** for the primary device to ensure that the output image can be displayed normally.

5.4.4 RGB Limited to RGB Full

The VX16s can automatically convert the color space of the video source from RGB limited to RGB full, allowing for more accurate video processing.

- Off: Don't convert the color space of the current video source from RGB limited to RGB full.
- On: Convert the color space of the current video source from RGB limited to RGB full. You are advised to turn on this function when the color space of the video source is RGB limited.

5.5 Display Control

This function is used to verify whether the LED display works properly. You can make the screen go black, freeze the screen, let the screen display test patterns or the content of an input source normally.

- Normal: Display the content of the current input source normally.
- Freeze: Freeze the current frame of the output image.

- FTB: Make the screen go black.
- Test Pattern: Test the display performance and working status of the LED screen. Options on this menu include **Pure Color**, **Gradient**, **Grid**, **Brightness**, **Spacing** and **Speed**.
- Image Color: Adjust the color of the output image. You can see the adjustment result on the LED screen in real time.

Table 5-3 Image color parameters

Parameter	Description
Brightness	The brightness value ranges from 0 to 100 and defaults to 50. The rotating stepping of the knob is 1.
Contrast	The contrast value ranges from 0 to 100 and defaults to 50. The rotating stepping of the knob is 1.
Saturation	The contrast value ranges from 0 to 100 and defaults to 50. The rotating stepping of the knob is 1.
Hue	The contrast value ranges from –180 to +180 and defaults to 0. The rotating stepping of the knob is 1.
Reset	Reset the image color parameters to the factory defaults.

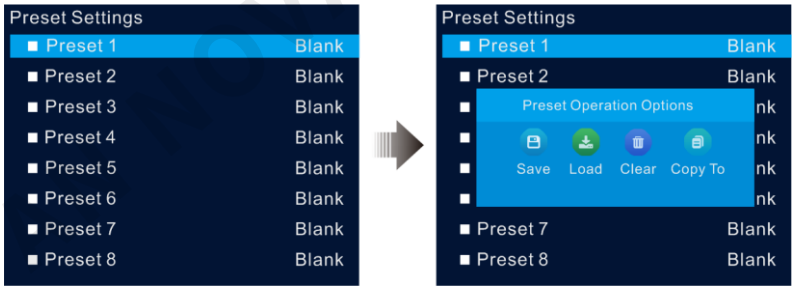
5.6 Preset Settings

The VX16s supports 10 presets. Users can save, load and clear the configured presets.

Step 1 Rotate the knob to select **Preset Settings** and press the knob to enter the preset settings screen.

Step 2 Rotate the knob to select the desired preset and press the knob. In the dialog box that appears, four preset operation options are provided: **Save**, **Load**, **Clear** or **Copy To**.

Figure 5-17 Preset operations



- Save: Save the settings of the current layer to the target preset.
- Load: Load the layout settings of the selected preset to the current layer.
- Clear: Clear all the contents in the selected preset.
- Copy To: Copy the layout settings of the current preset to the target preset.

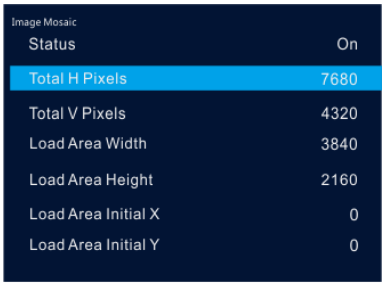
Note:

If the target preset contains data, the **Copy To** operation will overwrite its original data.

5.7 Image Mosaic

The image mosaic function is required when the resolution of an LED screen is greater than the loading capacity of a single VX16s unit. The total pixels loaded by all linked VX16s units equals the total resolution of the LED screen.

Figure 5-18 Image mosaic parameters



Example: If the resolution of the LED screen is 7680×4320 which exceeds the loading capacity of a single VX16s unit, four VX16s units will be required together for image mosaic.

Table 5-4 Parameter settings

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

5.8 Advanced Settings

5.8.1 Hot Backup

You can set the VX16s as the primary device or backup device. The data flow patterns in both the modes are the same.

- Set as Primary: The icon of the target Ethernet port on the home screen is highlighted.
- Set as Backup: The icon of the target Ethernet port on the home screen is highlighted and a small triangle appears on the bottom right of the icon.

When the primary device fails, the backup device will take over the work in real time.

5.8.2 Synchronization

Select a synchronization signal to synchronize all the linked VX16s units and keep the display of the output images of all the units in sync.

Step 1 Rotate the knob to select **Synchronization** and press the knob to enter the submenu.

Step 2 Rotate the knob to set the synchronization status and source.

- Status: Turn on or turn off this function. It defaults to **Off**.
- Source: Select the target input source.

5.8.3 FN

The **FN** button on the front panel can be customized as a shortcut for the **Synchronization** (default), **Freeze**, **FTB**, **Quick Configuration** or **Color** function.

5.8.4 Advanced Functions

Advanced functions include 3D mode and self-test settings.

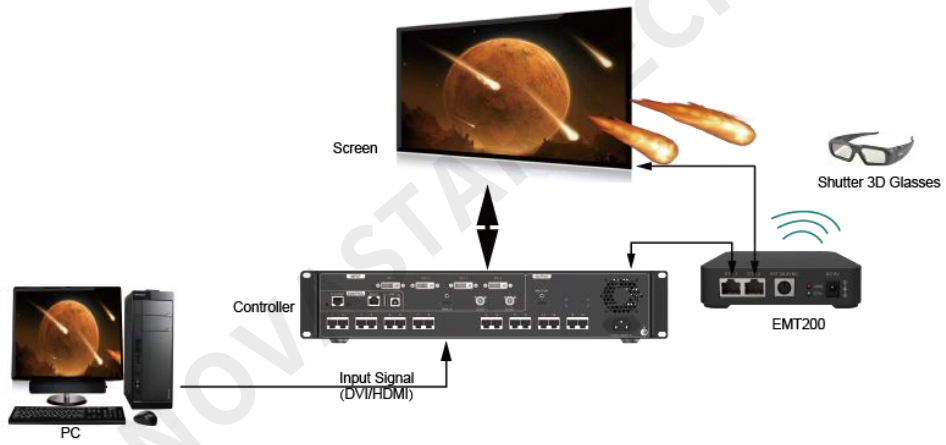
5.8.4.1 3D Mode

The VX16s can work with the EMT200 3D emitter and 3D glasses to provide you with 3D visual experience.

Notes

- Turning on 3D mode halves the device output capacity.
- To enable pixel-to-pixel display of a 3D video source, set the layer width to the half of the resolution width of the 3D source if the source is side-by-side, or set the layer height to the half of the resolution height of the 3D source if the source is top-and-bottom.

Figure 5-19 Hardware connections



Step 1 Complete the hardware connections as shown in Figure 5-19.

Step 2 Rotate the knob to choose **Advanced Functions** > **3D Mode** > **Status** to turn on the function.

Step 3 Select the 3D format of the video source. The options include **Side-by-Side**, **Top-and-Bottom** and **Frame Sequential**.

Step 4 Set the eye priority according to the mode of the 3D glasses. The options include **Left** and **Right**.

Step 5 Select **More Settings** to complete the following settings.

- Right Eye Start
- Signal Delay Time
- Third-Party Transmitter

For more detailed operating procedure of the 3D function, see A Instructions for the 3D Function.

5.8.4.2 Self-Test

When the VX16s fails, you can test it yourself and send the test result to NovaStar.

5.8.5 Output Frame Rate

You can set the output frame rate of the image output by the Ethernet ports. It defaults to 60 Hz. The provided options include 23.98 Hz, 24 Hz, 25 Hz, 29.97 Hz, 30 Hz, 47.95 Hz, 48 Hz, 50 Hz, 56 Hz, 59.94 Hz, 60 Hz, 70 Hz, 71.93 Hz, 72 Hz, 75 Hz, 85 Hz, 100 Hz, 119.88 Hz and 120 Hz.

5.8.6 Return to Home

You can set the period of time during which the system stays at the current page before returning to the homepage automatically when there is no operation performed. The default time is 60s and the maximum value is 3600s.

5.8.7 Factory Reset

You can reset all user data to factory settings.

5.8.8 About Us

You can view the following information.

- Device hardware version
- Official website
- Email (support@novastar.tech)

5.9 Partial Reset

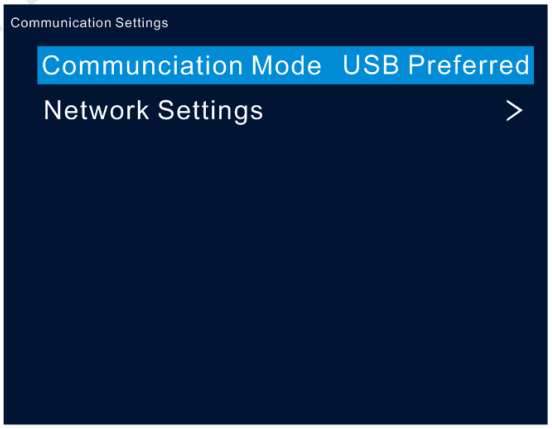
After partial reset, the name you set, loaded RCFGx files, preset parameters, IP address and subnet mask are kept while other parameters are all reset to the factory defaults.

5.10 Communication Settings

5.10.1 Communication Mode

The VX16s is connected to the PC via USB port and Ethernet port at the same time. The communication modes include **USB Preferred** and **LAN Preferred**.

Figure 5-20 Communication mode



- When **USB Preferred** is selected, the VX16s communicates with the PC via USB port by preference.

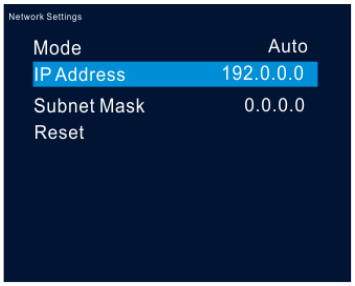
- When **LAN Preferred** is selected, the VX16s communicates with the PC via Ethernet port by preference.

5.10.2 Network Settings

The methods for network settings include **Manual** and **Auto**.

- Manual: Set the device IP address and subnet mask manually.
- Auto: The device reads the network parameters automatically.
- Reset: Reset the parameters to defaults.

Figure 5-21 Network settings



Notes:

- When the VX16s communicates with the control PC, they must be on the same LAN.
- The IP addresses of the VX16s and the control PC cannot be the same.

5.11 Language

The VX16s is available for Chinese and English. You can choose your desired language.

6 Specifications

Electrical Specifications	Power connector	100–240V~, 50/60Hz, 2.1A
	Power consumption	70 W
Operating Environment	Temperature	0°C to 50°C
	Humidity	20% RH to 85% RH, non-condensing
Storage Environment	Temperature	–20ºC to +60ºC
	Humidity	10% RH–85% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 372.5 mm × 94.6 mm
	Net weight	6.22 kg
	Gross weight	9.78 kg
Packing information	Carrying case	530.0 mm × 420.0 mm × 193.0 mm
	Accessories	1x European power cord 1x US power cord 1x UK power cord 1x Ethernet cable 1x USB cable 1x DVI cable 1x HDMI cable 1x Quick Start Guide 1x Certificate of Approval
	Packing box	550.0 mm × 440.0 mm × 215.0 mm
Certifications	CE, FCC, IC, RoHS	
Noise Level (typical at 25°C/77°F)		45 dB (A)

A Instructions for the 3D Function

A.1 For a Single VX16s Unit

Step 1 Select a 3D video source and connect it to the DVI or HDMI connector of the VX16s unit.

Step 2 Connect the VX16s unit to the EMT200 3D emitter and the LED screen in series via Ethernet cables. Then power on the EMT200 and turn on the shutter 3D glasses that come with the EMT200.

Step 3 Configure the screen. Please note that turning on the 3D mode will halve the output loading capacity of a single Ethernet port and the whole unit.

Step 4 Select the 3D video source format. Select **Side-by-Side**, **Top-and-Bottom** or **Frame Sequential** according to the actual video source format.

Step 5 Adjust the eye priority. Since the left and right eye image switching manner of the video source may not be in sync with your shutter 3D glasses, you need to adjust the eye priority according to actual visual effect after the 3D mode is turned on. The default option is **Left**.

Step 6 Adjust the right eye start.

- For a side-by-side 3D video source
  If the resolution of the video source is 1920×1080@60Hz, set the right eye start to 960. If the resolution of the video source is 3840×1080@60Hz, set the right eye start to 1920. In conclusion, it is recommended you set the right eye start to the half of the video source width.
- For a top-and-bottom 3D video source
  If the resolution of the video source is 1920×1080@60Hz, set the right eye start to 540. If the resolution of the video source is 3840×1080@60Hz, set the right eye start to 540. In conclusion, it is recommended you set the right eye start to the half of the video source height.
- For a frame-sequential 3D video source, you do not need to adjust this parameter.

Step 7 Adjust the signal delay to keep the left-right eye switching of the 3D glasses and the LED screen in sync. It is recommended you adjust the signal delay according to the actual visual effect after the 3D mode is turned on.

Step 8 Turn on the 3D mode. Then only the main layer is kept and other layers are closed.

Step 9 Wear your 3D glasses to enjoy the 3D effect. No matter how the main layer size or position is adjusted, the 3D effect will not be affected at all.

A.2 For Multiple VX16s Units

Step 1 Select a 3D video source and connect it to the DVI or HDMI connectors of all the VX16s units.

Step 2 Connect all VX16s units to the LED screen via Ethernet cables, and connect the EMT200 to one of the units via an Ethernet cable. Then power on the EMT200 and turn on the shutter 3D glasses that come with the EMT200.

Step 3 Configure the area of the screen loaded by each unit. Please note that turning on the 3D mode will halve the output loading capacity of a single Ethernet port and the whole unit.

Step 4 Set the image mosaic parameters of each unit, which will not be detailed in this document.

Step 5 Select the 3D video source format for all the units. Select **Side-by-Side**, **Top-and-Bottom** or **Frame Sequential** according to the actual video source format. Set the same video source format for all the units.

Step 6 Adjust the eye priority for all the units. Since the frame-sequential manner of the video source may not be in sync with your shutter 3D glasses, you need to adjust the eye priority according to actual visual effect after the 3D mode is turned on. The default option is **Left**. Set the same eye priority for all the units.

Step 7 Set the same right eye start for all the units.

- For a side-by-side 3D video source
  If the resolution of the video source is 1920×1080@60Hz, set the right eye start to 960. If the resolution of

the video source is 3840×1080@60Hz, set the right eye start to 1920. In conclusion, it is recommended you set the right eye start to the half of the video source width.

- For a top-and-bottom 3D video source
  If the resolution of the video source is 1920×1080@60Hz, set the right eye start to 540. If the resolution of the video source is 3840×1080@60Hz, set the right eye start to 540. In conclusion, it is recommended you set the right eye start to the half of the video source height.
- For a frame-sequential 3D video source, you do not need to adjust this parameter.

Step 8 Adjust the signal delay to keep the left-right eye switching of the 3D glasses and the LED screen in sync. It is recommended you adjust the signal delay according to the actual visual effect after the 3D mode is turned on.

Step 9 Turn on the synchronization function and select the current 3D video source as the synchronization source.

Step 10 Turn on the 3D mode and wear your 3D glasses to enjoy the 3D effect.

A.3 Notes

1. Turning on the 3D mode halves the loading capacity of each Ethernet port and the VX16s unit.
2. It is recommended you stay at most 3 meters away from the EMT200 when using the 3D glasses.
3. The frame rate of the selected 3D video source should be higher than 60 Hz.

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