NOVASTAR VX400 All-in-One Controller Instruction Manual

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Contents

Change History

Document Version	Release Date	Description
V1.0.0	2022-08-30	First release

Introduction

The VX400 is Nova Star's new all-in-one controller that integrates video processing and video control into one box. It features 4 Ethernet ports and supports video controller, fiber converter and Bypass working modes. A VX400 unit can drive up to 2.6 million pixels, with the maximum output width and height up to 10,240 pixels and 8192 pixels respectively, which is ideal for ultra-wide and ultra-high LED screens.
The VX400 is capable of receiving a variety of video signals and processing high-resolution images. In addition, the device features step less output scaling, low latency, pixel-level brightness and chroma calibration and more, to present you with an excellent image display experience.
What's more, the VX400 can work with Nova Star's supreme software Nova LCT and V-Can to greatly facilitate your infield operations and control, such as screen configuration, Ethernet port backup settings, layer management, preset management and firmware update. Thanks to its powerful video processing and sending capabilities and other outstanding features, the VX400 can be widely used in applications such as medium and high-end rental, stage control systems and fine-pitch LED screens.

Certifications

None
If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Nova Star to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or Nova Star has the right to claim compensation

Features

- Input connectors
  - 1x HDMI 1.3 (IN & LOOP)
  - 1x HDMI 1.3
  - 1x DVI (IN & LOOP)
  - 1x 3G-SDI (IN & LOOP)
  - 1x optical fiber port (OPT1)
- Output connectors
  - 4x Gigabit Ethernet ports

    A single device unit drives up to 2.6 million pixels, with a maximum width of 10,240 pixels and a maximum height of 8192 pixels.
  - 2x Fiber outputs

    OPT 1 copies the output on 4 Ethernet ports.

    OPT 2 copies or backs up the output on 4

    Ethernet ports.
  - 1x HDMI 1.3

    For monitoring or video output
- Self-adaptive OPT 1 for either video input or sending card output

  Thanks to the self-adaptive design, OPT 1 can be used as either an input or output connector, depending on its

connected device.

- Audio input and output
  - Audio input accompanied with HDMI input source
  - Audio output via a multifunction card
  - Output volume adjustment supported
- Low latency

  Reduce the delay from the input to receiving card to 20 lines when the low latency function and Bypass mode are both enabled.
- 2x layers
  - Adjustable layer size and position
  - Adjustable layer priority
- Output synchronization

  An internal input source can be used as the sync source to ensure the output images of all cascaded units in sync.
- Powerful video processing
  - Based on Super View III image quality processing technologies to provide step less output scaling
  - One-click full screen display
  - Free input cropping
- Automatic screen brightness adjustment

  Adjust the screen brightness automatically based on the ambient brightness collected by the external light sensor.
- Easy preset saving and loading

  Up to 10 user-defined presets supported
- Multiple kinds of hot backup
  - Backup between devices
  - Backup between Ethernet ports
- Mosaic input source supported

  The mosaic source is composed of two sources (2K×1K@60Hz) accessed to the OPT 1.
- Up to 4 units cascaded for image mosaic
- Three working modes
  - Video Controller
  - Fiber Converter
  - Bypass
- All-round color adjustment

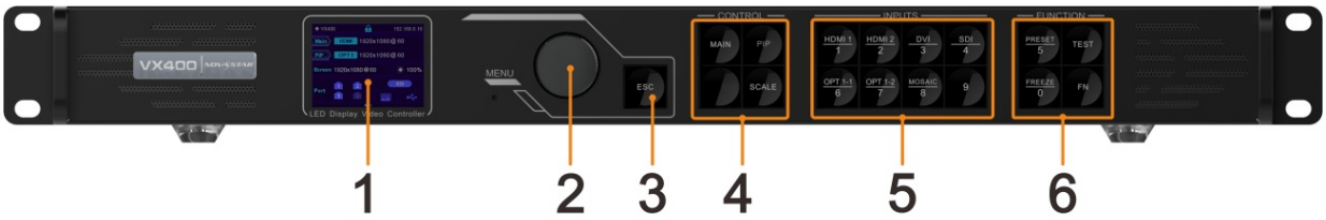
  Input source and LED screen color adjustment supported, including brightness, contrast, saturation, hue and Gamma
- Pixel level brightness and chroma calibration

  Work with Nova LCT and Nova Star calibration software to support brightness and chroma calibration on each LED, effectively removing color discrepancies and greatly improving LED display brightness and chroma consistency, allowing for better image quality.
- Multiple operation modes

  Control the device as you wish via V-Can, Nova LCT or device front panel knob and buttons.

Appearance

Front Panel



No.	Area	Function
1	LCD screen	Display the device status, menus, submenus and messages.
2	Knob	• Rotate the knob to select a menu item or adjust the parameter value. • Press the knob to confirm the setting or operation.
3	ESC button	Exit the current menu or cancel an operation.
4	Control area	• **MAIN/PIP:** Open or close a layer, and show the layer status. Status LEDs: ◦ On (blue): The layer is opened. ◦ Flashing (blue): The layer is being edited. ◦ On (white): The layer is closed. • **SCALE:** A shortcut button for the full screen function. Press the button to make the layer of the lowest priority fill the entire screen. Status LEDs: ◦ On (blue): Full screen scaling is turned on. ◦ On (white): Full screen scaling is turned off.
5	Input source buttons	Show the input source status and switch the layer input source. Status LEDs: • On (blue): An input source is accessed. • Flashing (blue): The input source is not accessed but used by the layer. • On (white): The input source is not accessed or the input source is abnormal. **Notes:** • When a 4K video source is connected to OPT 1, OPT 1-1 has a signal but OPT 1-2 does not have a signal. • When two 2K video sources are connected to OPT 1, OPT 1-1 and OPT 1-2 both have a 2K signal.
6	Shortcut function buttons	• **PRESET:** Access the preset settings menu. • **TEST:** Access the test pattern menu. • **Freeze:** Freeze the output image. • **FN:** A customizable button

Note:
Hold down the knob and ESC button simultaneously for 3s or longer to lock or unlock the front panel buttons.

Rear Panel

Input Connectors		
Connector	**Qty**	**Description**
3G-SDI	1	• ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs supported • Max. input resolution: 1920×1080@60Hz • Deinterlacing processing supported • 3G-SDI loop output supported • DOES NOT support input resolution and bit depth settings.
HDMI 1.3	2	• Max. input resolution: 1920×1200@60Hz • HDCP 1.4 compliant • DOES NOT support interlaced signal inputs • Custom resolutions supported ◦ Max. width: 3840 (3840×648@60Hz) ◦ Max. height: 2784 (800×2784@60Hz) ◦ Forced inputs supported: 600×3840@60Hz • Loop output supported on HDMI 1.3-1
DVI	1	• Max. input resolution: 1920×1200@60Hz • HDCP 1.4 compliant • DOES NOT support interlaced signal inputs • Custom resolutions supported ◦ Max. width: 3840 (3840×648@60Hz) ◦ Max. height: 2784 (800×2784@60Hz)
		◦ Forced inputs supported: 600×3840@60Hz • Loop output supported on DVI.
Output Connectors		
Connector	**Qty**	**Description**

Ethernet ports	4	Gigabit Ethernet ports • Max. loading capacity: 2.6 million pixels • Max. width: 10,240 pixels • Max. height: 8192 pixels Ethernet ports 1 and 2 support audio output. When you use a multifunction card to par se the audio, be sure to connect the card to Ethernet port 1 or 2. Status LEDs: • The top left one (green) indicates the connection status. ◦ On: The port is well connected. ◦ Flashing: The port is not well connected, such as loose connection. ◦ Off: The port is not connected. • The top right one (yellow) indicates the communication status. • On: The Ethernet cable is short-circuited. • Flashing: The communication is good and data is being transmitted. • Off: No data transmission
HDMI 1.3	1	• Support monitor and video output modes. • The output resolution is adjustable.
Optical Fiber Ports		
Connector	**Qty**	**Description**
OPT	2	• OPT 1: Self-adaptive, either for video input or for output ◦ When the device is connected with a fiber converter, the port is used as an o utput connector. ◦ When the device is connected with a video processor, the port is used as an i nput connector. ◦ Max. capacity: 1x 4K×1K@60Hz or 2x 2K×1K@60Hz video inputs • OPT 2: For output only, with copy and backup modes OPT 2 copies or backs up the output on 4 Ethernet ports.
Control Connectors		
Connector	**Qty**	**Description**

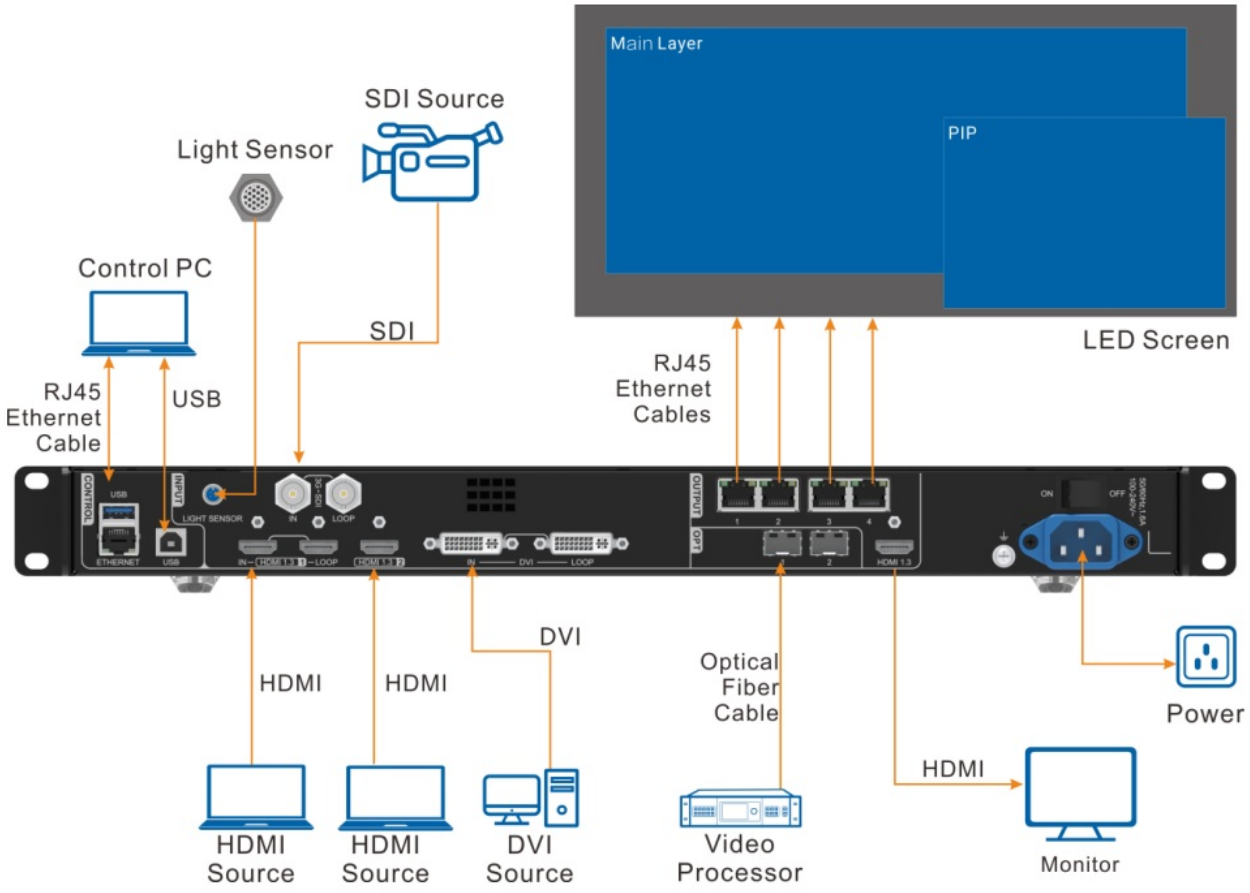
ETHERNET	1	Connect to the control PC or router. Status LEDs:
		• The top left one indicates the connection status.
		  ◦ On: The port is well connected.
		  ◦ Flashing: The port is not well connected, such as loose connection.
		  ◦ Off: The port is not connected.
		• The top right one indicates the communication status.
		  ◦ On: The Ethernet cable is short-circuited.
		  ◦ Flashing: The communication is good and data is being transmitted.
		  ◦ Off: No data transmission

LIGHT SENSOR	1	Connect to a light sensor to collect the ambient brightness, allowing for automatic screen brightness adjustment

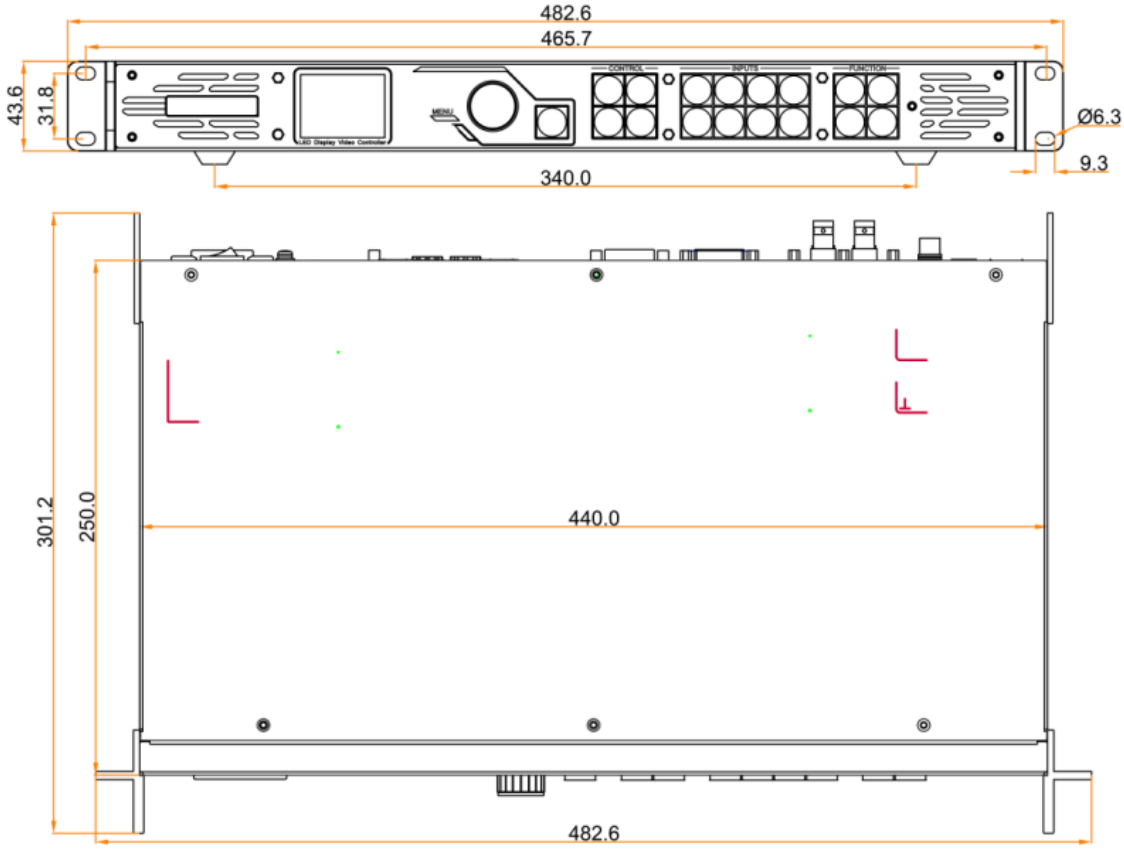
USB	2	• USB (Type-B):
		  ◦ Connect to the control PC.
		  ◦ Input connector for device cascading
		• USB (Type-A): Output connector for device cascading

Note:
Only the main layer can use the mosaic source. When the main layer uses the mosaic source, the PIP layer cannot be opened.

Applications



Dimensions



Carton

Specifications

Electrical Parameters	Power connector	100–240V~, 1.6A, 50/60Hz
	Rated power consumption	28 W
Operating Environment	Temperature	0°C to 45°C
	Humidity	20% RH to 90% RH, non-condensing
Storage Environment	Temperature	–20°C to +70°C
	Humidity	10% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	483.6 mm × 301.2 mm × 50.1 mm
	Net weight	4 kg
Packing Information	Accessories	1x Power cord 1x HDMI to DVI cable 1x USB cable 1x Ethernet cable 1x HDMI cable 1x Quick Start Guide 1x Certificate of Approval 1x Safety Manual
	Packing size	550.0 mm × 175.0 mm × 400.0 mm
	Gross weight	6.8 kg
Noise Level (typical at 25°C/77°F)		45 dB (A)

Video Source Features

Input Connectors	Bit Depth		Max. Input Resolution
I HDMI 1.3 I DVI I OPT 1	8-bit	RGB 4:4:4	1920×1200@60Hz (Standard) 3840×648@60Hz (Custom) 600×3840@60Hz (Forced)
		Ycbcr 4:4:4	
		Ycbcr 4:2:2	
		Ycbcr 4:2:0	Not supported
	10-bit		Not supported
	12-bit		Not supported
3G-SDI	• Max. input resolution: 1920×1080@60Hz • DOES NOT support input resolution and bit depth settings. • Supports ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs.		

Statement
Thank you for choosing Nova Star’s product. This document is intended to help you understand and use the product. For accuracy and reliability, Nova Star may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via the contact information given in this document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

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Documents / Resources

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