TECNOGROUP
LED TECHNOLOGY EXPERTS

NOVASTAR

VC16

All-in-One Controller

V1.0.0

Specifications

Change History

Document Version	Release Date	Description
V1.0.0	2024-07-08	First release

Introduction

The VC16 is NovaStar's new all-in-one controller that integrates video processing and video control into one box. It features 16 Ethernet ports. A VC16 unit can drive up to 10.4 million pixels, with the maximum output width and height up to 16,384 pixels and 8192 pixels respectively, which is ideal for on-site extra-wide and extra-high LED screen control applications.

The VC16 is capable of receiving a variety of video signals and processing 10-bit videos. It supports up to 6+1 4K×2K@60Hz video signal inputs. In addition, the device features 6 independent windows, output scaling, pixel-level brightness and chroma calibration and more, to present you with an excellent image display experience.

The VC16 is designed with an industrial-grade casing. Thanks to its powerful video processing and sending capabilities and other outstanding features, the VC16 is a perfect fit for large-scale fixed installation applications in governments, enterprises, military command centers and more.

Features

- A comprehensive range of input connectors
  - 1x HDMI 2.0
  - 1x DP 1.2
  - 4x HDMI 1.3
  - 1x 3G SDI (IN+LOOP, optional)
- More outputs, larger loading capacity

  16x Gigabit Ethernet ports

  A single device unit drives up to 10.4 million pixels, with a maximum width of 16,384 pixels and a maximum height of 8192 pixels.
- 3D function

  Work with the EMT200 3D emitter and matched 3D glasses to present

a 3D visual experience. The device output capacity will be halved after the 3D function is enabled.

- Audio input and output
  - Audio input accompanied with HDMI and DP sources
  - 3.5 mm independent audio input and output
- Personalized image scaling

  Supports three kinds of image scaling modes, including full screen, pixel to pixel and custom.
- Multiple window display
  - Supports 2x 4K×2K+4x 2K×1K windows.
  - Adjustable window size and position
  - Adjustable window priority
- OSD settings
  - Supports one OSD display.
  - Up to 6 OSD can be imported and saved.
  - Supports OSD image and OSD text.
- BKG settings
  - Up to 4 BKG images can be imported.
  - BKG image does not occupy the window resources.
  - The max. width or height of a BKG image is up to 8192 pixels.
- Capture function

  Capture the input source image which can be used as a BKG image.
- HDR output

  Greatly enhances display image quality, providing more clear and vivid image.
- Powerful video processing
  - Based on SuperView III image quality processing technologies to provide stepless output scaling.
  - One-click full screen display
  - Free input cropping
- EDID management

  Supports custom EDID and standard EDID.
- Color adjustment

  Supports output color management, including brightness, saturation, contrast and hue.
- Easy preset saving and loading
  - Up to 10 user-defined presets supported
  - Load a preset by simply pressing one button.
  - Delete, overwrite, save and copy a preset.
- Hot backup
  - Backup between devices
  - Backup between Ethernet ports
  - Input source hot backup

- Ethernet port backup test

  Test whether the pre-stored images, backup Ethernet ports and devices take effect without plugging and unplugging the Ethernet cables.

- Import and export EDID files
- Display the MAC address on the device LCD screen.
- Output synchronization

  Use an internal input source as the sync source to make the output images of all the device in synchronous display.

- Pixel level brightness and chroma calibration

  Work with NovaLCT and NovaStar calibration software to support brightness and chroma calibration on each LED, which can effectively remove color discrepancies and greatly improve LED display brightness and chroma consistency, allowing for better image quality. The function of displaying image on screen for test is also supported.

- Multiple operation modes

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

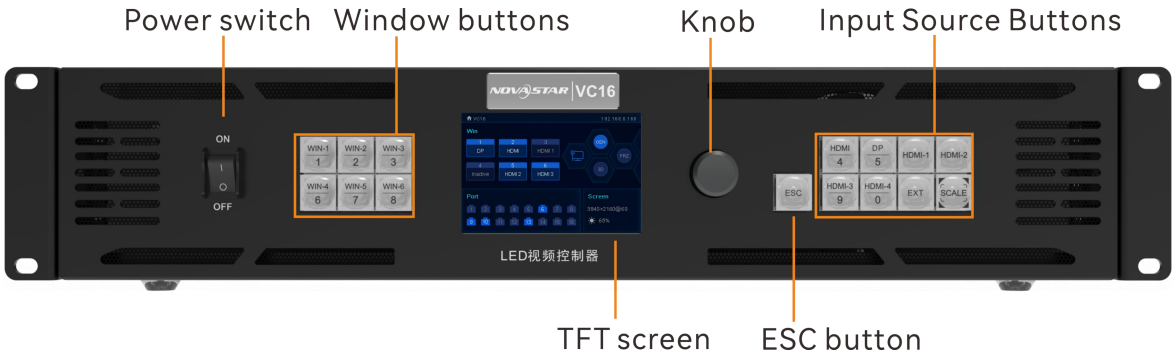
- Free layout

  The receiving card that is left blank is not calculated, and the constraint of rectangular load capacity calculation is eliminated. The used loading capacity is calculated according to the cabinets that are actually loaded.

  *Please contact our technical support staff to obtain the receiving card models which support this function.

Appearance

Front Panel



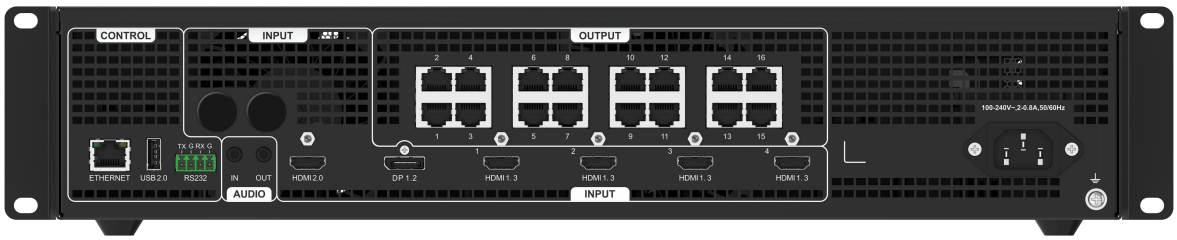
Button	Description
Power switch	Power on or power off the device.
Window buttons	• When the window is closed, press the button to open the window and enter the corresponding window settings screen. • When the window is opened, press the button to enter the corresponding window settings screen. • When the window is opened, hold down the button to close the window. Status LEDs: • On: The window is opened. • Off: The window is closed. • Flashing: The window is being edited. **Note:** The input source of window 3, window 4, window 5 or window 6 cannot be switched to HDMI 2.0 or DP 1.2.
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.
Input source	Show the input source status and switch the window input source.

Button	Description
buttons	• On: An input source is accessed. • Flashing: The input source is not accessed but used by the window. • Off: The input source is not accessed. **Note:** On the home screen, when window 1 is opened, you can press the input source button to quickly switch the input source for window 1.
	• SCALE: A shortcut button for the full screen function. Press the button to make the window of the lowest priority fill the entire screen. Status LEDs: – On: Full screen scaling is turned on. – Off: Full screen scaling is turned off.

Note:

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

Rear Panel



*The picture shown is for illustration purpose only. Actual product may vary due to product enhancement.

Input Connectors		
Connector	**Qty**	**Description**
HDMI 2.0	1	1x HDMI 2.0 • Max. input resolution: 4K×2K@60Hz or 8K×1K@60Hz • Custom resolutions supported

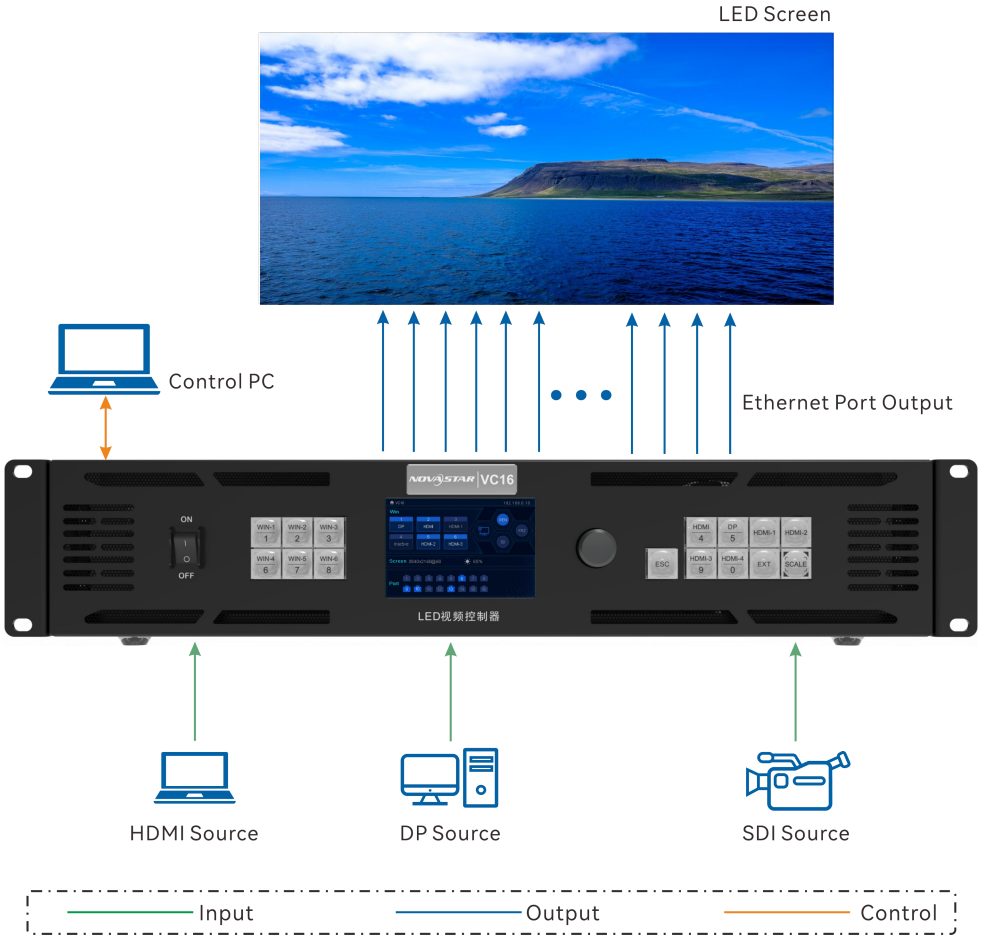
		Max. width: 8192 pixels Max. height: 8192 pixels Max. frame rate: 120Hz • HDCP 1.4 and HDCP 2.2 supported • Accompanied audio supported • Supported standard resolutions: 1920×1080@24/25/30/48/50/60Hz 3840×1080@30/50/60/120Hz 2560×1600@50/60/120Hz 3840×2160@24/25/30/50/60Hz 4096×2160@30/60Hz 7680×1080@30/60Hz 8192×1080@30/60Hz • Does NOT support interlaced signal inputs.
DP 1.2	1	1x DP 1.2 • Max. input resolution: 4K×2K@60Hz or 8K×1K@60Hz • Custom resolutions supported Max. width: 8192 pixels Max. height: 8192 pixels • HDCP 1.3 compliant • EDID management supported • Accompanied audio supported • Supported standard resolutions: 1366×768@50/60Hz 1920×1080@24/25/30/48/50/60Hz 3840×1080@30/50/60/120Hz 2560×1600@50/60/120Hz 3840×2160@24/25/30/50/60Hz 4096×2160@30/60Hz 7680×1080@30/60Hz

		8192×1080@30/60Hz • Does NOT support interlaced signal inputs.
HDMI 1.3	4	4x HDMI 1.3 • Max. input resolution: 2K×1K@60Hz • Custom resolutions supported Max. width: 2048 pixels Max. height: 2048 pixels • HDCP 1.4 compliant • Accompanied audio supported • Supported standard resolutions: 1366×768@50/60Hz 1920×1080@24/25/30/48/50/60Hz • Does NOT support interlaced signal inputs.
3G-SDI	1	1x 3G-SDI (optional) • ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs supported • Max. input resolution: 1920×1080@60Hz • Interlaced signal input and deinterlacing processing supported • 3G-SDI loop output supported • Supported resolutions: 720×576i PAL @50Hz 720×486i NTSC @59.94Hz 1920×1080i@50/59.94/60Hz 1920×1080@23.98/24/25/29.97/30/50/59.94/60Hz 1280×720@23.98/24/25/29.97/30/50/59.94/60Hz • Does NOT support input resolution settings.
Audio Connectors		
AUDIO	2	1x AUDIO input, 1×AUDIO output

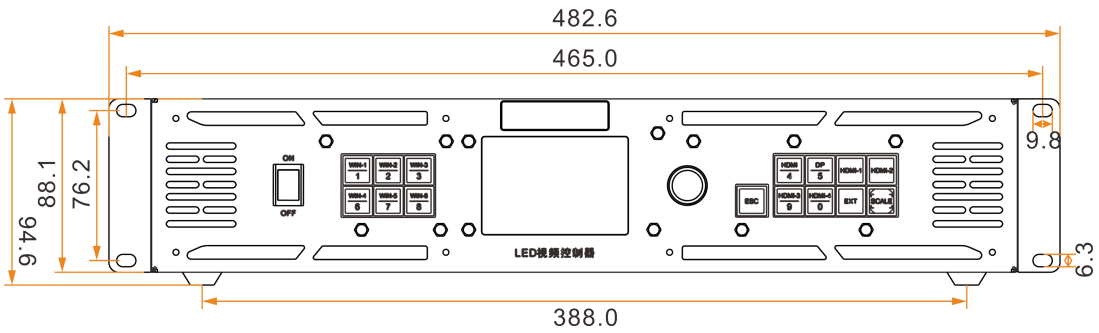
		• 3.5 mm standard audio input and output connectors • Audio sampling rate up to 48 kHz
Output Connectors		
Connector	**Qty**	**Description**
Ethernet ports	16	Gigabit Ethernet ports • Max. loading capacity: 10.4 million pixels Max. width: 16,384 pixels Max. height: 8192 pixels • A single port loading capacity: – 650,000 pixels (input bit depth: 8bit, output frame rate: 60Hz) – 325,000 pixels (input bit depth: 8bit, output frame rate: 120Hz) **Note:** Ethernet ports 1 and 2 support audio output. When you use a multifunction card to parse the audio, be sure to connect the card to Ethernet port 1 or 2.
Control Connectors		
Connector	Qty	Description
ETHERNET	1	Connect to the control PC for firmware update. 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: No data communication. – Flashing: The communication is good and data is being transmitted.

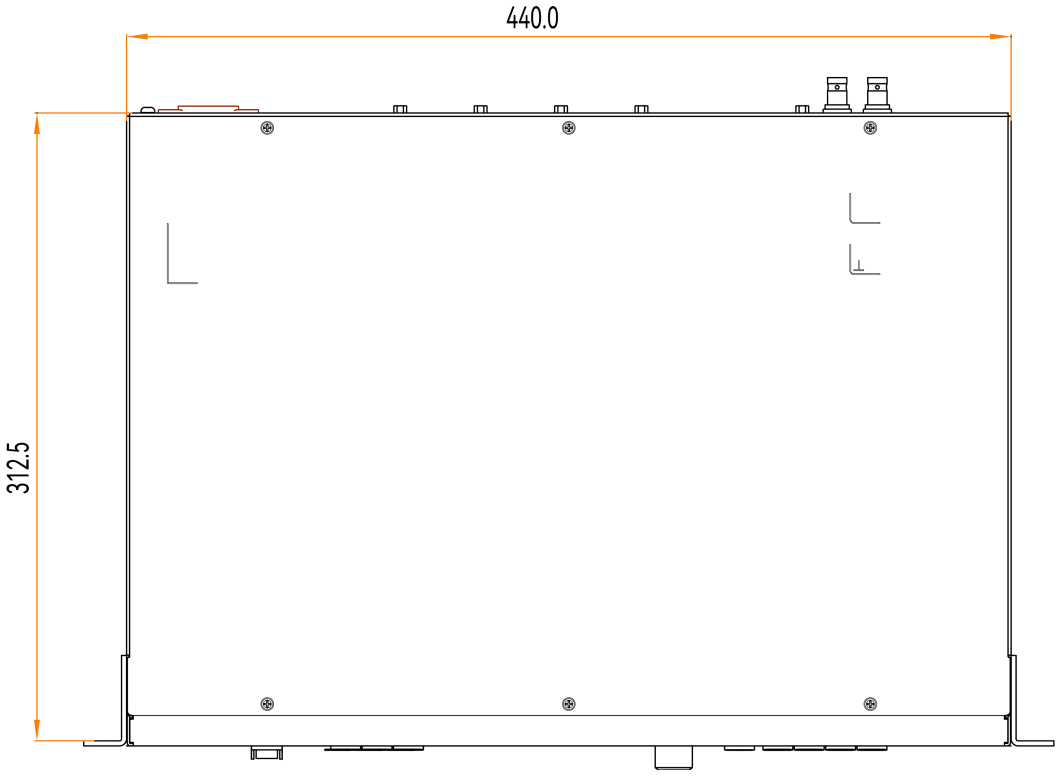
		– Off: No data transmission
USB	1	Update the firmware via the USB drive.
RS232	1	Connect to the central control device.

Applications



Dimensions





公差：±0.3　　单位：mm

Specifications

Overall Specifications		
Electrical Specifications	Power connector	AC100V ~ 240V, 2~0.8A, 50/60Hz
	Power consumption	50 W
Operating Environment	Temperature	0°C to 50°C
	Humidity	0% RH to 80% RH, non-condensing
Storage Environment	Temperature	−20°C to +60°C
	Humidity	0% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 312.5 mm × 94.6 mm
	Net weight	6.4 kg
	Gross weight	8.9 kg
	Noise level	41 dB (A)
Packing Information	Carton	535.0 mm × 200.0 mm × 430.0 mm
	Accessories	1x Power cord 1x DP cable 1x HDMI cable 1x CAT5E Ethernet cable 1x Screwdriver 1x Phoenix connector 1x Certificate of Approval
	Packing size	550.0mm × 215.0mm × 440.0mm

Video Source Feature

Input Connectors	Bit Depth		Max. Input Resolution
HDMI 2.0	8bit	RGB4:4:4	3840×2160@60Hz
		YCbCr4:4:4	
		YCbCr4:2:2	
		YCbCr4:2:0	
	10bit/12bit	RGB4:4:4	3840×2160@30Hz
		YCbCr4:4:4	
		YCbCr4:2:2	3840×2160@60Hz
		YCbCr4:2:0	
DP 1.2	8bit	RGB4:4:4	3840×2160@60Hz
		YCbCr4:4:4	
		YCbCr4:2:2	
	10bit/12bit	RGB4:4:4	3840×2160@30Hz
		YCbCr4:4:4	
		YCbCr4:2:2	3840×2160@60Hz
HDMI 1.3	8bit	RGB4:4:4	1920×1080@60Hz
		YCbCr4:4:4	
		YCbCr4:2:2	
	10bit	RGB4:4:4	1920×1080@60Hz
		YCbCr4:4:4	
		YCbCr4:2:2	

Input Connectors	Bit Depth	Max. Input Resolution
3G-SDI	• Max. input resolution: 1920×1080@60Hz • Does NOT support input resolution settings. • Supports ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs.	