VC10 Pro

All-in-One Controller

Specifications

Change History

Document Version	Release Date	Description
V1.0.0		Demo

Introduction

The VC10 Pro is an all-in-one controller combining video processing and video control functionalities into a single device. Capable of managing up to 6.5 million pixels, the VC10 Pro can output at a maximum width of 10,240 pixels and a height of 8,192 pixels, making it perfectly suited for controlling ultra-wide and ultra-high LED screens on-site.

The VC10 Pro boasts powerful video signal reception and processing capabilities, supporting a maximum resolution of 4K×2K@60Hz for video input. It can handle multiple video signal inputs and includes features like 6 layers, output scaling, and pixel-level brightness and chroma calibration. These functions combine to deliver outstanding image display quality.

With various control options available, the VC10 Pro can be operated via the front panel knob, NovaLCT, Unico web page and VICP app, providing you with a convenient and effortless control experience.

The VC10 Pro is housed in an industrial-grade casing, which, combined with its powerful video processing and transmission capabilities, makes it robust and well-suited for complex operational environments. The VC10 Pro is a perfect fit for 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 NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.

Features

Multiple connectors, free input and output

- A comprehensive range of input connectors
  - 1x HDMI 2.0 (IN & LOOP)

  - 2x HDMI 1.3
  - 1x 3G-SDI (IN & LOOP)
  - 1x USB 3.0 (Play images or videos saved in a USB drive.)
- Output connectors
  - 10x Gigabit Ethernet ports

    A single device supports up to 6.5 million pixels, delivering a maximum width of 10,240 pixels and a maximum height of 8192 pixels.
  - 1x HDMI 1.3

    For monitoring display.
- Audio input and output
  - Audio input accompanied with HDMI sources
  - 3.5 mm independent audio input and output
  - Adjustable output volume
- Free topology

  Flexible screen configuration without rectangle restriction on a single Ethernet port. The maximum circumscribed rectangle of the large screen loaded by the device must be within the device loading capacity.

  *Specific receiving cards are required.
- Output synchronization

  An input source connected to the device's video connector can be used as the sync source to ensure the output images of all cascaded units in sync.
- EDID management

  Import and export EDID files.

Diverse display possibilities for flexible configuration

- Easy preset saving and loading
  - Up to 256 user-defined presets supported
  - Load a preset by simply pressing one button.
  - Save, overwrite and delete a preset.
  - Preview the layer layout saved in the preset.
- Multiple layer display
  - Supports 6*2K×1K layer resources.

    Users can create layers in three different specifications - 4K×2K, 4K×1K, and 2K×1K. These layers will use 4x, 2x, and 1x 2K layer resources respectively, depending on the capacity of the input source connector used to open the layers.
  - Adjustable layer size and position
  - Adjustable layer priority
  - Adjustable aspect ratio

- OSD function
  - Supports the text OSD and image OSD. For the text OSD, four components are available, including static text OSD, dynamic text OSD, weather OSD and time OSD.
  - Supports customization of the text content, font, font color, size, opacity and background color.
  - Supports configuration of the scrolling direction, initial position and speed for the dynamic text OSD.
- 3D function

  Connect the EMT200 Pro 3D emitter to the device's Ethernet port, and use the compatible 3D glasses to enjoy a 3D visual experience.

  Note: When the 3D function is enabled and the video source format is **Side-by-Side** or **Top-and-Bottom**, the device output capacity will be halved.
- Personalized image scaling

  Supports three kinds of image scaling modes, including full screen, pixel to pixel and custom.
- Powerful video processing
  - Based on SuperView III image quality processing technologies to provide stepless output scaling.
  - One-click full screen display
  - Free input cropping
- Color adjustment

  Supports output color management, including brightness, saturation, contrast and hue.
- 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.

USB playback, timesaving and effortless

- Supports USB playback for instant plug-and-play convenience.

Multiple device modes and operation modes, convenient and efficient

- User mode selection supported
  - Standard: Only some LCD menu options are displayed, including screen brightness, layer settings, preset settings, display control, USB playback, audio settings, user mode and about us.
  - Professional: Display all LCD menu options.
- Multiple control options
  - Device front panel knob
  - Unico web page control

- NovaLCT
- VICP app

Data saving after power failure and backup design, stable and reliable

- End-to-end backup
  - Backup between devices
  - Backup between input sources
  - Backup between Ethernet ports
- Ethernet port backup test

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

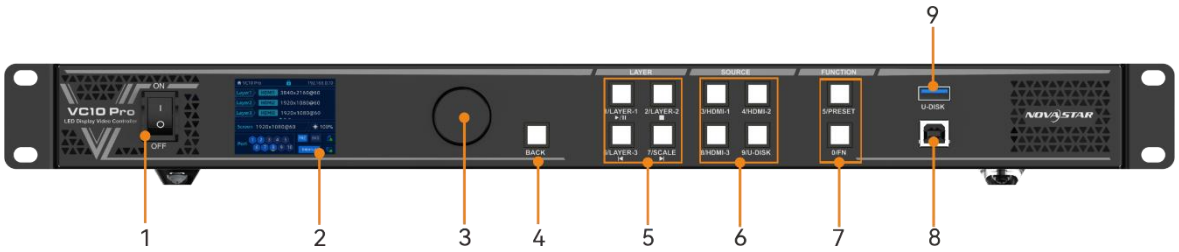
  After a normal shutdown or unexpected power outage, reconnecting the power will automatically restore the previously saved settings on the device.
- 24/7 rigorous stability test under extreme high and low temperatures proved robust stability and reliability.

Table 4-1 Function limitations

Function	Limitation	Mutually Exclusive Function
3D	• Work with the matched 3D glasses. • When the 3D function is enabled and the video source format is **Side-by-Side** or **Top-and-Bottom**, the device output capacity will be halved.	Input crop
OSD	• The quantity of the text OSD components is as follows. – Static text OSD: 10 – Dynamic text OSD: 1 – Weather OSD: 2 – Time OSD: 2 • The text OSD and image OSD cannot be used together. • The dynamic text OSD and other text OSD components cannot be used together.	N/A

Appearance

Front Panel



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

No.	Area	Function
1	Power switch	Power switch • **On**: Power on the device. • **Off**: Power off the device.
2	LCD screen	Display the device status, menus, submenus and messages.
3	Knob	• Rotate the knob to select a menu item or adjust the parameter value. • Press the knob to confirm the setting or operation.
4	Back button	Exit the current menu or cancel the operation.
5	Layer buttons	Layer button description: • LAYER 1~3: Open or close a layer, and show the layer status. – On (blue): The layer is opened. – Flashing (blue): The layer is being edited. – Off: The layer is closed. • When you play media files saved in a USB drive, the layer buttons are used to control the playback. – LAYER-1: This button is used to play or pause the files. – LAYER-2: This button is used to stop the playback. – LAYER-3: This button is used to play the previous file.
		• SCALE: A shortcut button for the full screen function. Press the button to make the layer of the lowest priority fill the entire screen. – On (blue): Full screen scaling is turned on. – Off: Full screen scaling is turned off. • When you play media files saved in a USB drive, this button is used to play the next file.
6	Input source buttons	• HDMI 1~3: Show the input source status and switch the layer input source. – On (blue): The input source has a signal. – Flashing (blue): The input source has no signals, but it is used by a layer.

No.	Area	Function
		– Off: The input source is not used, and no input signal is accessed. ● U-DISK: USB source button Press the button to switch to a USB source, while hold down the button to enter the **Input Settings** screen. Note On the home screen, when layer 1 is opened, you can press the input source button to quickly switch the input source for layer 1.
7	Function buttons	● PRESET: Access the preset settings menu. ● FN: A custom function button
8	USB	Connect to the PC installed with NovaLCT for device control.
9	U-DISK	1x USB 3.0 ● Supports USB playback. – Single-partition USB drive supported – File system: NTFS, FAT32 and exFAT – Max. width and height of media files Width: 3840 pixels, height: 2160 pixels – Picture format: jpg, jpeg, png and bmp – Decoded image resolution: 3840×2160 or lower – Video format: mp4, mkv, mov, avi, flv, m4v, mpg, mpeg, ts – Video coding: H.264, H.265, MPEG-2, MPEG-4 – Max. video frame rate: H.264: 3840×2160@30fps, H.265: 3840×2160@60fps MPEG-2/MPEG-4: 1920×1080@60fps – Max bitrate: H.264/H.265: 100Mbps MPEG-2/MPEG-4: 50Mbps – Audio coding: AAC, AC3, DTS, MP3, DVD, DVD_LPCM, MP2, OPUS – Audio sampling rate: opus: 24kHz, 48kHz Other formats: 22.05kHz to 94kHz – Transition effect of image switching: Ripple, zoom in, push, flip, blinds, H wipe, V wipe, cube, dissolve, grid, swapping, scroll, fade in/out, twirl, heart trans, curtains, perspective triangle, disappear, bounce, star rotation, random Note The resolution of a USB source is fixed at 1920×1080@60Hz.

Note

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

Rear Panel

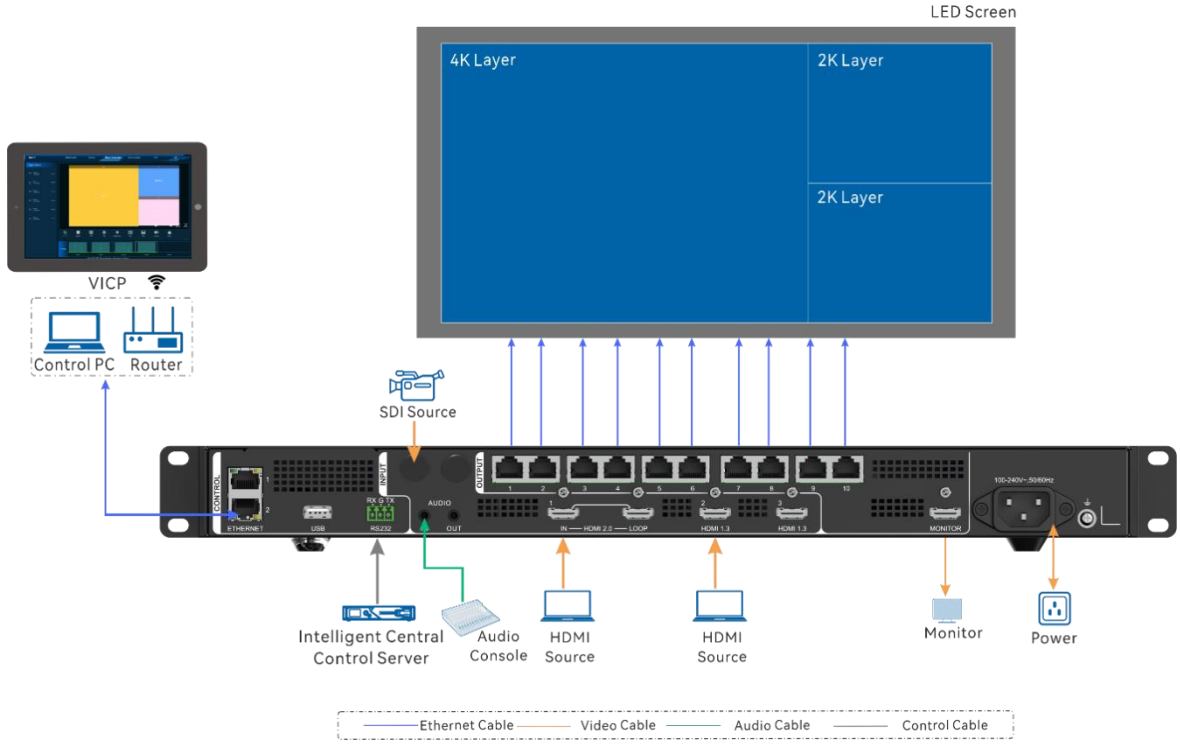
*The picture shown is for illustration purpose only. Actual product may vary due to product enhancement.

Input Connectors		
Connector	Qty	Description
HDMI 2.0	1	1x HDMI 2.0 • Max. input resolution: 4096×2160@60Hz • Supported frame rate: 23.98/24/25/29.97/30/47.95/48/50/56/59.94/60/70/71.93/72/75/85/100/119.88/120/144 • Compatible with HDMI 1.4 and HDMI 1.3 video inputs • HDMI 2.0-1 loop out supported • Custom resolutions supported – Max. width: 8192 pixels (8192×1080@60Hz) – Max. height: 8188 pixels (1080×8188@60Hz) • Supports 8-bit/10-bit/12-bit video inputs. • Supported color space/sampling rate: RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2/YCbCr 4:2:0. • HDCP 1.4 and HDCP 2.2 supported • Accompanied audio supported • Does not support interlaced signal inputs.
HDMI 1.3	2	2x HDMI 1.3 • Max. input resolution: 1920×1080@60Hz • Supported frame rate: 23.98/24/25/29.97/30/47.95/48/50/56/59.94/60/70/71.93/72/75/85/100/119.88/120 • Custom resolutions supported – Max. width: 2048 pixels: 2048 pixels (2048×1080@60Hz) – Max. height: 2048 pixels 2048 pixels (1080×2048@60Hz) • Supports 8-bit video inputs. • HDCP 1.4 supported • Supported color space/sampling rate: RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 • Accompanied audio supported • Does not support interlaced signal inputs.
3G-SDI	1	1x 3G-SDI • ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs supported • Supported protocols: SMPTE 259M, SMPTE 274M, SMPTE 296M, SMPTE 425M-A and SMPTE 425M-B • Max. input resolution: 1920×1080@60Hz

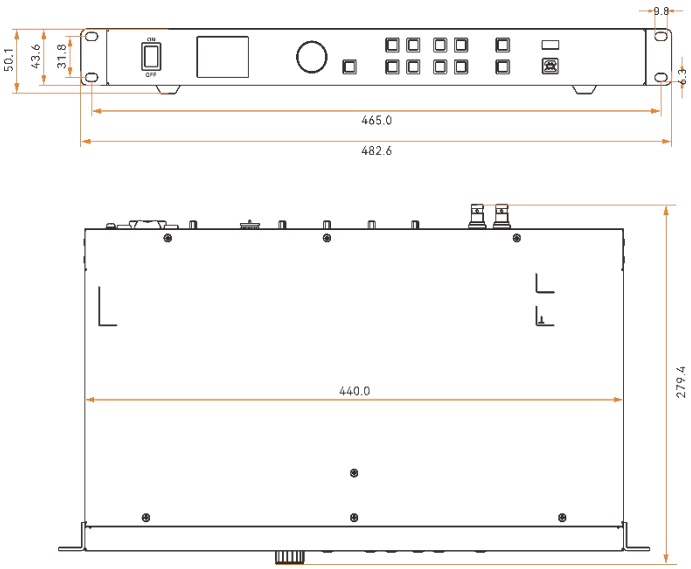
		• 3G-SDI loop output supported • Deinterlacing processing supported • 10-bit video inputs supported • Does not support input resolution and bit depth settings.
*Connector capacity limitations		• SL – Standard resolution: 1920×1080@60Hz – Custom max width: 2048 (2048×1080@60Hz) – Custom max height: 2048 (1080×2048@60Hz) • DL – Standard resolution: 3840×1080@60Hz/3840×2160@30Hz – Custom max width: 4096 (4096×1080@60Hz) – Custom max height: 3840 (1080×3840@60Hz) • 4K – Standard resolution: 4096×2160@60Hz/8192×2160@30Hz – Custom max width: 8192 (8192×1080@60Hz) – Custom max height: 8188 (1080×8188@60Hz) **Note** If the resolution of an input source is larger than the max width limit of the connector capacity, you need to switch the connector capacity to ensure that the input source can be processed normally.
Output Connectors		
Connector	Qty	Description
Ethernet ports	10	• Max. loading capacity: 6.5 million pixels • Max. width: 10,240 pixels, max. height: 8192 pixels • Maximum capacity of a single port: 650,000 pixels (output bit depth: 8bit) • Supported frame rate: 23.98/24/25/29.97/30/47/48/50/59.94/60/71.93/72/75/85/95/100/119.88/120/144
HDMI 1.3	1	For monitoring display Output resolution: 1920×1080@60Hz (fixed)
Audio Connectors		
Connector	Qty	Description
AUDIO	2	1x AUDIO input, 1×AUDIO output • 3.5 mm standard audio input and output connectors • Audio sampling rate up to 48 kHz
Control Connectors		
Connector	Qty	Description
ETHERNET	2	• Connect to the PC and log into the Unico web page for device control and firmware upgrade. • Input or output connector for device cascading Status LEDs:

		• The top left one indicates the connection status. – On: The port is properly connected. – Flashing: The port is not properly 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	1x USB 2.0 • Update the firmware via the USB drive. • Import or export device logs and EDID files.
RS232	1	3-pin connectors • RX: Receive signals. • TX: Send signals. • G: Ground

Applications



Dimensions



Tolerance: ±0.5 Unit: mm

Specifications

Electrical Parameters	Power connector	100-240V~, 50/60Hz
	Rated power consumption	44 W
Operating Environment	Temperature	0° C to 50° C
	Humidity	5% RH to 85% RH, non-condensing
Storage Environment	Temperature	-10° C to 60° C
	Humidity	5% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 279.4 mm × 50.1 mm
	Net weight	TBD
	Total weight	TBD
Packing Information	Carrying case	565 mm × 328 mm × 88 mm
	Accessories	1x Power cord, 1x Ethernet cable, 1x HDMI cable, 1x USB cable, 1x Phoenix connector, 1x Quick Start Guide, 1x Certificate of Approval
	Packing box	586 mm × 353 mm × 465 mm Note Up to 5 devices can be packed into one packing box.
Noise Level	45 dB (A)	

(typical at 25° C/77° F)	

Video Source Features

Input Connectors	Common Resolutions		Color Space	Sampling Rate	Bit Depth	Integer Frame Rates (Hz)
HDMI 2.0	4K×2K	4096×2160	RGB / YCbCr	4:4:4	12bit	24/25/30
					10bit	24/25/30
					8bit	24/25/30/48/50/60
			YCbCr	4:2:2	8/10/12bit	
			YCbCr	4:2:0	8/10/12bit	
	4K×1K	3840×1080	RGB / YCbCr	4:4:4	12bit	24/25/30/48/50/60/72/85
					10bit	24/25/30/48/50/60/72/100
					8bit	24/25//30/48/50/60/72/120
			YCbCr	4:2:2	8/10/12bit	
			YCbCr	4:2:0	8/10/12bit	
	2K×1K	1920×1080	RGB / YCbCr	4:4:4	12bit	24/25/30/48/50/60/72/120/144
					10bit	24/25/30/48/50/60/72/120/144
					8bit	24/25/30/48/50/60/72/120/144
			YCbCr	4:2:2	8/10/12bit	
			YCbCr	4:2:0	8/10/12bit	
HDMI 1.3	2K×1K	1920×1080	RGB / YCbCr	4:4:4	12bit	24/25/30
					10bit	24/25/30/48/50/60
					8bit	24/25/30/48/50/60
			YCbCr	4:2:2	8/10/12bit	
3G-SDI	2K×1K	1920×1080	YCbCr	4:2:2	8/10/12bit	24/25/30/48/50/60

Note

The table above shows some common resolutions and integer frame rates only. The adaptation to decimal frame rates is also supported, including 23.98/29.97/59.94/71.93/119.88Hz.

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