Every NovaStar product is designed and built with six main principles in mind: innovation, stability, security, power, ease of use, and customer service. This is why NovaStar products are used all around the world, and trusted for huge events such as the 2008 Beijing Olympic Games, the World Cup, and WWE. From the smallest event to the world’s greatest stages, NovaStar’s LED display control systems set the industry standard for excellence.
When founded in 2008, NovaStar was nothing but the unlikely dream of a few university students. Working in two alternating shifts around the clock to try and create their first product, missing holidays and balancing schoolwork, ever focused on the goal of one day becoming one of the premier tech companies in the world. That same year, NovaStar was chosen to provide LED display technology for the 2008 Beijing Olympic Games, beginning a journey that is still going strong.

Today, NovaStar is one of the leading LED display solution providers in the world. Still headquartered in their original hometown of Xi’an China, Nova now has more than 10,000 customers. NovaStar also has over 1000 proprietary intellectual property patents for products in LED display control, cloud computing, and other fields, leading to the receipt of numerous design and Innovation awards.

Nova’s many products include LED display synchronous and asynchronous control systems, calibration systems, cloud-based content publishing and management systems, and more. These products are all designed to integrate easily, forming a complete ecosystem for the setup, operation, and maintenance of LED displays.

We believe that the key to success is innovation. Not only technological innovation, but also the finding of new ways to communicate and interact with customers. Innovative ways to increase the functionality of products, while making them even easier to use. How to increase power and speed while not sacrificing stability or security. These are the questions and goals that so many years later continue to keep our engineers up at night.

A Nova is one of the brightest astral bodies in the night sky. At NovaStar, we spend every day trying to live up to that name. From day one, becoming the brightest star in the LED display control industry has been the vision of our founder and the entire Nova team. With NovaStar products now trusted all over the world for huge events from the Rio Games to the World Cup to WWE, the unlikely dream has now become a reality.

Innovation pushes industry and drives future

Patents related to NovaStar in field account for 90% and are growing at an annual pace of 30%.
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<td></td>
</tr>
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<td>MCTRL4K 21</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCTRL660 PRO 25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taurus Multimedia Player 27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Always on the leading edge of LED technology, NovaStar controllers are fast, sleek, and powerful.

Controller

- All-in-one Controller
  - NovaPro UHD: 09
  - NovaPro UHD Jr: 11
  - NovaPro HD: 13
  - VX6s: 15
  - VX4U: 17
  - VX4S: 19

- Controller
  - MCTRL4K: 21
  - MCTRL RS: 23
  - MCTRL660 PRO: 25
  - Taurus Multimedia Player: 27
Features

- A variety of input connectors: 4×12G-SDI connectors with loop output functions, 1×HDMI 2.0 with loop output functions, and 1×DP 1.2.
- 1×replaceable input card with four connectors.
- The input card can be DVI or HDMI.
- 16×Neutrik Ethernet ports and 4×optical fiber output connectors.
- The loading capacity can be up to 8.8 million pixels.
- 6×layers, 1×OSD, 1×LOGO, and 1×BKG.
- 2×layers up to 4K×2K, 4×layers up to 2K×1K.
- Layers can be scaled.
- OSD supports cropping, transparency adjustment, adding dynamic/static images and position adjustment.
- Layer transparency adjustment, irregular layers, layer mask, and layer overlapping and layer flipping supported.
- Layer priority adjustment by z-order.
- Up to 8K display width or height of a single device.
- MultiViewer monitoring settings, including monitoring of input sources, PVM, PGM, or mixed preview.
- 16 × Neutrik Ethernet outputs, 4×10G fiber optical outputs with copy and hot backup modes.
- Quick and advanced screen configurations.
- With the built-in smart Master VI platform, LED screen configuration, layer configuration and video playback can be easily performed via the connected mouse, keyboard, and monitor.
- HDR function to make images finer and smoother.
- Powerful image processing capability to realize low latency from input to output.
- Remote data transmission via a Gigabit Ethernet port or fiber optical connector.

The NovaPro UHD is a new all-in-one controller developed by NovaStar. By integrating video processing, video control and LED screen configuration functions into one controller, this product is capable of receiving a variety of video signals, processing and sending images of resolutions up to ultra HD 4K×2K@60Hz and 8K×1K@60Hz, and provides a loading capacity of 8.8 million pixels.

With the built-in Master VI smart platform, the NovaPro UHD supports layer creation, property settings, and screen configuration via simple mouse, keyboard, and monitor operations.

The NovaPro UHD supports sending of processed video to LED display through NovaStar Ethernet port or fiber optical connectors. With powerful video processing and sending capabilities, this product is well suited for high-end rental applications, stage control systems, and fine-pitch LED displays.
NovaPro UHD Jr

NovaPro UHD Jr is NovaStar’s brand new video controller, combining 4K processing and 4K sending into a single all-in-one marvel of technology. With unrivalled processing ability and excellent loading capacity, the NovaPro UHD Jr brings you an amazing viewing experience.

**Features**

- 8K×1K / 4K×2K, free scaling to any size with crisp post-scaled image.
- HDR (High Dynamic Range) support. Wide color gamut and high contrast for the ultimate visual experience.
- 8K×1K / 4K×2K, free scaling to any size with crisp post-scaled image.
- HDR (High Dynamic Range) support. Wide color gamut and high contrast for the ultimate visual experience.
- Real 4K inputs DP 1.2×1, HDMI2.0×1, 12G SDI×2, DVI×4.
- 4×DVI inputs - Support linking together into a single 4K×2K / 8K×1K input.
- 16×Neutrik Ethernet ports and 4 optical ports, reaching 10.4 million pixel loading capacity.
- Support flexible layout of 3 layers.
- Genlock, ensuring that multiple linked units maintain synchronization.
- Ultra-low latency, making sure the display matches the live action.
- Supports 3D function with scaling and splicing.
- Works as either sending card or optical converter useful for long-distance transmission.
- Support Capture source image as BKG display.
- Supports 3D function with scaling and splicing.
- Works as either sending card or optical converter useful for long-distance transmission.
- Support Capture source image as BKG display.
- Supports V-Can operation software, SmartLCT NovaLCT mapping software.

**Input**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12G-SDI</td>
<td>2</td>
<td>Support input resolution up to 4K×2K@60Hz and downscale compatibility. Supports 12G-SDI loop output.</td>
</tr>
<tr>
<td>DP1.2</td>
<td>1</td>
<td>Support input resolution up to 4K×2K@60Hz and downscale compatibility. Supports HDCP 1.4, and HDCP 2.2. Supports 10G-SDI loop output.</td>
</tr>
<tr>
<td>HDMI2.0</td>
<td>2</td>
<td>Four DVI connectors adopt plug-in design for connecting different input cards according to users' needs. HDMI input cards, Dual-link DVI input cards are supported. The default option is DVI input card.</td>
</tr>
</tbody>
</table>

**Output**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet port</td>
<td>16</td>
<td>16-channel bungee Ethernet output connectors, allowing for cascading能力 of up to 16x4x500 display.</td>
</tr>
<tr>
<td>DVI/OPT1</td>
<td>4</td>
<td>4×DVI inputs - Support linking together into a single independent 4K×2K / 8K×1K input.</td>
</tr>
<tr>
<td>HDMI LOOP</td>
<td>1</td>
<td>HDMI loop output connector. Only 1 level of device cascading supported.</td>
</tr>
<tr>
<td>12G-SDI LOOP</td>
<td>2</td>
<td>2×12G SDI loop output connectors.</td>
</tr>
<tr>
<td>MONITOR</td>
<td>1</td>
<td>HDMI connector for output monitoring. Resolution up to 1920×1080@60Hz.</td>
</tr>
</tbody>
</table>

**Control**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHERNET</td>
<td>1</td>
<td>Connect to the PC for communication, or connect to the Web for device control.</td>
</tr>
<tr>
<td>USB (Type-B)</td>
<td>1</td>
<td>Connect to the PC for device control. Could be the output connector to connect a NovaPro UHD Jr for image mosaic.</td>
</tr>
<tr>
<td>USB (Type-A)</td>
<td>1</td>
<td>Used as the output connector to connect a NovaPro UHD Jr for image mosaic.</td>
</tr>
<tr>
<td>GENLOCK IN- LOOP</td>
<td>1</td>
<td>Connect to a synchronization signal to synchronize with the connected NovaPro UHD Jr.</td>
</tr>
<tr>
<td>RS232</td>
<td>1</td>
<td>Connect to the control device.</td>
</tr>
</tbody>
</table>
NovaPro HD

Features

- The inputs of the NovaPro HD include CVBS, VGA, SDI, DVI, HDMI and DP. They support input resolutions up to 1080p@60Hz. Highest pixel clock is 165MHz. Output bandwidth is up to 4GBit.
- Advanced de-interlacing motion adaptive processing technology is adopted so that images are clear and fine. And with HDMI, the gray scale depth can be up to 12bits.
- Each input can be fully configured with contrast, brightness, hue, saturation, and RGB gain. Inputs can be scaled up or down to fit the LED display resolution.
- Computer software for system configuration is not necessary. The system can be configured using one wheel and one button. All can be done just by fingers. That’s what we called Touch Track! You can also configure the system with browsers. This gives you the option of using a remote PC (Windows or Mac or Linux), a pad or even a smart phone to do the configuration.
- The NovaPro HD is the flagship product of our new generation controllers, powerful in processing, professional in control, and friendly in user interface. Having a display to work has never been as easier and more enjoyable as with NovaPro HD.

Specifications

<table>
<thead>
<tr>
<th>Input Port</th>
<th>Amount</th>
<th>Resolution Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>1</td>
<td>PAL/NTSC</td>
</tr>
<tr>
<td>VGA</td>
<td>1</td>
<td>VESA standard</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>VGA standard, supporting HDCP</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</td>
<td>1408×1056i, 1280×1024/60 Hz, 1440×900/60 Hz</td>
</tr>
<tr>
<td>DP</td>
<td>1</td>
<td>1920×1080/60 Hz/50 Hz, 2560×1600/60 Hz</td>
</tr>
<tr>
<td>4-SID</td>
<td>1</td>
<td>480i, 576i, 720p, 1080i/p</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output Port</th>
<th>Amount</th>
<th>Resolution Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVI input looping out (DVILOOP)</td>
<td>1</td>
<td>Connected with DVI input</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</td>
<td>1408×1056i, 1280×1024/60 Hz, 1440×900/60 Hz, 1360×1200/60 Hz, 1920×1080/60 Hz, 2560×1600/60 Hz</td>
</tr>
<tr>
<td>DP</td>
<td>1</td>
<td>1920×1080/60 Hz/50 Hz, 2560×1600/60 Hz</td>
</tr>
<tr>
<td>4-SID</td>
<td>1</td>
<td>480i, 576i, 720p, 1080i/p</td>
</tr>
</tbody>
</table>
The VX6s is an all-in-one video controller that integrates sending card functions with video processing. Designed with powerful video processing capability, it supports 7 inputs and 6 Gigabit Ethernet outputs. Based on the powerful FPGA processing platform, the VX6s supports multiple transition effects, such as quick seamless switching and fade, providing flexible display controlling and outstanding video presentations.

### Features
- 7 input connectors: 2×3G-SDI, 2×HDMI 1.3, 2×DVI+DVI LOOP, and 1×USB playback.
- Supports seamless switching and fade.
- Supports quick and advanced screen configurations.
- Switches the PVM to PGM by pressing only the TAKE button in the switcher.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.
- The maximum loading capacity of video output is 3.9 million pixels.
- Multiple VX6s units can be cascaded.
- Supports auto-fit function of windows.
- The maximum video output width is 4096 pixels.
- A total of 16 user presets can be created and saved as templates.
- Switches the PVW to PGM by pressing only the TAKE button in the switcher.
- Supports input resolutions up to 1920x1080@60Hz and downward compatibility.
- Connects to a USB flash drive to play video or picture files stored in the drive.
- Connects to a mouse.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.
- The maximum loading capacity of video output is 3.9 million pixels.
- Multiple VX6s units can be cascaded.
- Supports auto-fit function of windows.
- The maximum video output width is 4096 pixels.
- A total of 16 user presets can be created and saved as templates.
- Supports input resolutions up to 1920x1080@60Hz and downward compatibility.
- Connects to a USB flash drive to play video or picture files stored in the drive.
- Connects to a mouse.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.
- The maximum loading capacity of video output is 3.9 million pixels.
- Multiple VX6s units can be cascaded.
- Supports auto-fit function of windows.
- The maximum video output width is 4096 pixels.
- A total of 16 user presets can be created and saved as templates.
- Connects to a USB flash drive to play video or picture files stored in the drive.
- Connects to a mouse.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.
- The maximum loading capacity of video output is 3.9 million pixels.
- Multiple VX6s units can be cascaded.
- Supports auto-fit function of windows.
- The maximum video output width is 4096 pixels.
- A total of 16 user presets can be created and saved as templates.
- Connects to a USB flash drive to play video or picture files stored in the drive.
- Connects to a mouse.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.
- The maximum loading capacity of video output is 3.9 million pixels.
- Multiple VX6s units can be cascaded.
- Supports auto-fit function of windows.
- The maximum video output width is 4096 pixels.
- A total of 16 user presets can be created and saved as templates.
- Connects to a USB flash drive to play video or picture files stored in the drive.
- Connects to a mouse.
- Supports adjustment of input resolutions.
- Supports device redundancy settings.

### Rear Panel

#### Input
- **3G-SDI**: 2
- **USB**: 2
- **DVI**: 2
- **DVI-LOOP**: 1
- **HDMI**: 2

#### Output
- **Ethernet**: 6

#### Control
- **Ethernet**: 1
- **USB (Type-B)**: 1
- **USB (Type-A)**: 1

### Controller

#### Input
- **Connector**: Qty Description
  - 3G-SDI: 2 Supports input resolutions up to 1920x1080@60Hz and downward compatibility.
  - USB: 2 Connects to a USB flash drive to play video or picture files stored in the drive.
  - DVI: 2 Connects to a mouse.
  - DVI-LOOP: 1 DVI loop output connector.
  - HDMI: 2 Supports input resolutions up to 1920x1200@60Hz and downward compatibility.

### Output
- **Connector**: Qty Description
  - Ethernet: 6 Ethernet outputs.
  - USB (Type-B): 1 Connects to the PC for device control.
  - USB (Type-A): 1 Connects to the output connector for cascading devices.

The VX6s supports multiple transition effects, such as quick seamless switching and fade, providing flexible display controlling and outstanding video presentations.
**Features**

- The inputs of the VX4U include CVBS×2, VGA×2, DVI×1, HDMI×1, DP×1 and USB×1. The supported input resolution is up to 1920×1200@60Hz. The input images of VX4U can be zoomed point-to-point according to the resolution of LED display.
- With seamless quick switching and fade-in/out effects to enhance and present pictures of professional quality.
- The location and size of PIP (Picture in Picture) are adjustable, which can be controlled at will.
- Adopts NovaStar G4 engine. The screen is stable and flicker free without scanning lines. Images are exquisite and have a good sense of depth.
- Able to perform white balance calibration and color gamut mapping based on the different features of LEDs used by screens to ensure reproduction of true colors.

**Specifications**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Input index</th>
<th>Qty</th>
<th>Description specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>2</td>
<td></td>
<td>PAL/NTSC</td>
</tr>
<tr>
<td>VGA</td>
<td>2</td>
<td></td>
<td>VESA Standard, support max. 1920×1200@60Hz input.</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td></td>
<td>VESA Standard (support 1080i input), support HDCP.</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</td>
<td></td>
<td>EIA/CEA-861 standard, in accordance with HDMI-1.3 standard, support HDCP.</td>
</tr>
<tr>
<td>DP</td>
<td>1</td>
<td></td>
<td>VESA Standard.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Qty</th>
<th>Description specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>DVI</td>
<td>2</td>
<td>Max output: 1920×1200@60Hz (2.3 million pixels). Self-defined output resolution (Bandwidth optimization). Max. horizontal resolution up to 3840 pixels. Max. vertical resolution up to 1920 pixels.</td>
</tr>
</tbody>
</table>
The VX4S is a professional LED display controller. Besides the function of display control, it also features powerful front-end video processing, high image quality and flexible image control. VX4S is able to meet the demands of media industry.

### Features
- **The inputs of the VX4S include CVBS×2, VGA×2, DVI×1, SDI×1, HDMI×1, DP×1 and SDI×1.** They support input resolution up to 1920×1200@60Hz; the input images of VX4S can be zoomed point-to-point according to the screen resolution.
- **Provide seamless high-speed switching and fade-in/fade-out effect so as to strengthen and display picture demonstration of professional quality.**
- **The location and size of PIP can both be adjusted, which can be controlled at will.**
- **Adopt the NovaStar G4 engine; the screen is stable and flicker free without scanning lines; the images are exquisite and have a good sense of depth.**
- **Can implement white balance calibration and color gamut mapping based on different features of LEDs used by screens to ensure reproduction of true colors.**
- **HDMI/external audio input.**
- **10bit/1 Bit HD video source.**
- **The loading capacity: 2.3 million pixels.**
- **Support multiple controller management for loading huge screen.**
- **Support NovaStar’s new-generation point-by-point calibration technology; the calibration is fast and efficient.**
- **Computer software for system configuration is not necessary. The system can be configured using one knob and one button. All operations can be done in a few steps. That’s what we call Easy Screen Configuration.**
- **Adopt an innovative architecture to implement smart configuration; the screen debugging can be completed within several minutes, greatly shorten the preparation time on the stage.**
- **An intuitive LCD display interface and clear button light hint simplify the control of the system.**

### Specifications

#### Rear Panel

<table>
<thead>
<tr>
<th>Input Source</th>
<th>Audio</th>
<th>Audio Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>CVBS Input</td>
<td></td>
</tr>
<tr>
<td>VGA</td>
<td>VGA Input</td>
<td></td>
</tr>
<tr>
<td>DVI</td>
<td>DVI Input</td>
<td></td>
</tr>
<tr>
<td>HDMI</td>
<td>HDMI Input</td>
<td></td>
</tr>
<tr>
<td>DP</td>
<td>DP Input</td>
<td></td>
</tr>
</tbody>
</table>

#### Output Interface

<table>
<thead>
<tr>
<th>Interface</th>
<th>VGA LOOP</th>
<th>DVI LOOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor-DVI OUT</td>
<td>Monitor-DVI Interface 1</td>
<td></td>
</tr>
<tr>
<td>Monitor-DVI IN 2</td>
<td>Monitor-DVI Interface 2</td>
<td></td>
</tr>
<tr>
<td>LED Out 1, 2, 3, 4</td>
<td>4 Internet port outputs</td>
<td></td>
</tr>
</tbody>
</table>

#### Controlling Interface

<table>
<thead>
<tr>
<th>Type &amp; Port</th>
<th>USB Control (Communication with PC, or Cascade Input)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A, female USB</td>
<td>USB Control (Communication with PC, or Cascade Input)</td>
</tr>
<tr>
<td>Type B, female USB</td>
<td>USB Control (Communication with PC, or Cascade Input)</td>
</tr>
</tbody>
</table>

#### Power

- **AC 100-240V – 50/60Hz**
- **AC power interface**

#### Controller

<table>
<thead>
<tr>
<th>Port</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>VGA Standard, support max. 1920×1200@60Hz input.</td>
</tr>
<tr>
<td>VGA</td>
<td>VGA Standard, support max. 1920×1200@60Hz input.</td>
</tr>
<tr>
<td>DVI</td>
<td>HDMI Standard, support max. 1920×1200@60Hz.</td>
</tr>
<tr>
<td>SDI</td>
<td>HDMI Standard, support max. 1920×1200@60Hz.</td>
</tr>
<tr>
<td>HDMI</td>
<td>HDMI Standard, support max. 1920×1200@60Hz.</td>
</tr>
<tr>
<td>DP</td>
<td>HDMI Standard, support max. 1920×1200@60Hz.</td>
</tr>
</tbody>
</table>
**Features**

- **HDR 10** (High Dynamic Range): The MCTRL4K controller with A8s or A10s Plus receiving cards offers an excellent solution to precisely parse HDR video sources.

- **HLG**: HDR Live Grade, which can capture high-dynamic range images directly, making the images have more overall detail, a wider range of colors, and look more similar to what is seen by the human eyes. And no metadata is required for real-time transmission.

- **3D / Three Dimensional**: MCTRL4K can support 3D function by adding one NovaStar 3D External Emitter EM250 and updating the program.

- **4K**: MCTRL4K can support 4K function by adding one NovaStar 4K External Emitter EM1100 and updating the program.

- **DS**: MCTRL4K can support 3D function by adding one NovaStar 3D External Emitter EM250 and updating the program.

- **LED**: MCTRL4K can support LED function by adding one NovaStar LED External Emitter EM1100 and updating the program.

- **Control**

  - **Input**
    - DVI 1.0
    - HDMI 1.4
    - HDMI 2.0
    - HDMI 2.0x2
    - DP 1.2
    - DP 1.2x2
    - Supports RJ45 16-channel Neutrik Gigabit Ethernet output.
    - Supports dual 10-channel Neutrik Gigabit Ethernet output.
    - Supports dual-link DVI-D1/D2.
    - Supports dual-Link DVI-D interface.
    - Supports USB 2.0 device connection.
    - Supports Optical Fiber 4-channel output.
    - Supports Optical Fiber output interfaces.

  - **Output**
    - Supports RJ45 16-channel Neutrik Gigabit Ethernet output.
    - Supports RJ45 4-channel Optical Fiber output.
    - Supports dual-link DVI-D interface.
    - Supports dual-link DVI-D interface.
    - Supports dual-link DVI-D interface.

- **Control Interface**

  - Supports Novastar’s latest pixel-by-pixel calibration technology, the process of which is fast and efficient.

  - Enables white balance calibration and color gamut mapping based on the different features of LEDs on the display to ensure the real restoration of color.

  - Manual adjustment of screen brightness, which makes it much easier and quicker.

- **Multiple controllers are able to be cascaded for uniform control.**

- **Supports low latency.**

**MCTRL4K**

MCTRL4K is an independent master controller developed by NovaStar with an epoch-making significance. The loading capacity of a single unit is up to 4096×2160@60Hz, which is able to meet the on-site requirements of oversized LED displays. MCTRL4K makes it easier to create stunning visual effects for users. MCTRL4K also can be used as two independent master controllers, which makes it more flexible to load LED displays.

The design of MCTRL4K is innovative. It allows to configure a display at any time without PC. Various video inputs such as DP, HDMI, dual-link DVI-D and outputs of 16-channel Neutrik Gigabit Ethernet ports as well as 4-channel optical fiber ports are supported.
MCTRL R5 is an independent master controller developed by NovaStar with an epoch-making significance. Its flexible rotation function allows users to make their LED displays more creative. The loading capacity of a single unit is up to 3840×1080@60Hz. MCTRL R5 can meet the on-site requirements of oversized LED displays.

With a unique innovative design, it enables screen configuration any time without the need for a computer. Various video inputs such as HDMI, dual-link DVI, SDI and outputs of 8-channel Neutrik Gigabit Ethernet as well as 2-channel optical fiber are supported.

MCTRL R5 also can serve as two independent controllers, which makes it more flexible to load LED displays and creates a stunning experience for users.
**Features**

- **Input connectors**: 1×3G-SDI, 1×HDMI 1.4a, 1×single-link DVI.
- **Output connectors**: 6×Gigabit Ethernet port, 2×10G optical port.
- **Loop output connectors**: 1×3G-SDI LOOP, 1×HDMI LOOP, 1×DVI LOOP.
- **Input of ultra-high color depths**, such as 10-bit/12-bit 4:4:4, with input resolutions up to 1920×1080@60Hz, increasing color expression capabilities by 4096 times compared to 8-bit inputs, and presenting images with rich and delicate colors, smoother transitions, as well as clearer details.
- **Independent Gamma adjustment of RGB**, effectively controlling image non-uniformity under low grayscale and white balance offset to improve image quality.
- **Support low latency**.
- **Dual working modes**: working as sending card and fiber converter.
- **One-click backup and recovery**, quickly recovering previous screen configurations to deal with sudden on-site failure.
- **Image flipping**, making stage effect more cool and dazzling.

**Rear Panel**

The MCTRL660 PRO is a professional controller developed by NovaStar. A single MCTRL660 PRO has a loading capacity of up to 1920×1920 pixels. It allows users to customize resolutions to configure ultra-large screens with ultra-width or ultra-height.

The MCTRL660 PRO is mainly used for the rental and fixed fields, such as concerts, live events, security monitoring centers, Olympic Games and various sports centers.

**Input Connector Description**

- **DVI IN**: Single-link DVI connector for custom resolutions supported.
- **HDMI IN**: Custom resolutions supported.
- **3G-SDI LOOP**: The OPT1 works as the primary input or output port, and the 6 Gigabit Ethernet ports work as the corresponding input or output ports.
- **HDMI LOOP**: SMPTE ST 425-1 Level A & B, SMPTE ST 274, ST 296, ST 295 compliant. Supported input resolutions: 1920×1080@60Hz, 1280×720@60Hz. Note: Do not support setting the resolutions for 3G-SDI input sources.
- **MONITOR**: Connects to a monitor to monitor the inputs. The output resolution is 1920×1080@60Hz.
- **OPT1/2**: Connects to PC and supports TCP/IP. ETHERNET RJ45×6. Up to 8 MCTRL660 PRO units can be cascaded. Genlock type: Blackburst. Genlock sync signal: Used to ensure synchronization between the LED screen display and external Genlock source.

**Output Connector Description**

- **OPT1/2**: 10G optical ports. The loading capacity of a single optical port is equal to that of 6 Ethernet ports + 2 DVI ports.
- **HDMI**: 4Kx2K HDMI input.
- **3G-SDI**: SMPTE ST 274, ST 296 compliant. Supported input resolutions: 1920×1080@60Hz, 1280×720@60Hz, 720×480@60Hz, 720×480@30Hz. Note: Do not support setting the resolutions for 3G-SDI input sources.

**Power**

100 V – 240 V AC.
Taurus Multimedia Player

Features

- Self-connects to optimal signal, eliminating drop-outs.
- Real-time watchdog software, averting trouble before it appears.
- Remote emergency connection, allowing you to respond to issues at a moment’s notice.
- Multiple redundant backup, for ultimate stability.
- Integrated sending and control, with no need for a PC, keeping operation simple.
- Supports cloud publishing and monitoring. No need to be on-site to manage your displays.
- Synchronous and asynchronous modes, with scheduled or free switching to meet the needs of any scenario.
- Support for control via PC, mobile, pad, and other smart devices.

Product name

<table>
<thead>
<tr>
<th></th>
<th>TB3</th>
<th>TB6</th>
<th>TB8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading capacity</td>
<td>600,000</td>
<td>1,360,000</td>
<td>2,800,000</td>
</tr>
<tr>
<td>Processing</td>
<td>8 Cores</td>
<td>8 Cores</td>
<td>8 Cores</td>
</tr>
<tr>
<td>WiFi capability</td>
<td>Dual WiFi</td>
<td>Dual WiFi</td>
<td>Dual WiFi</td>
</tr>
<tr>
<td>X:Y:Z ratio</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Redundant backup</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Synchronous / asynchronous switching</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Screen splicing</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Certified</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Suitable applications

- Advertisement screens
- Small fixed installations
- Transparent screens
- Pole screens
- On-board screens
- Indoor fixed installations
- Chain stores
- Hotels
- Movie theaters
- Transparent screens
- Mirrored screens
- Advertisement screens

Note: Total memory 8GB, 4GB available to user.

Taurus series products are NovaStar’s second generation of multimedia players dedicated to full-color LED displays.

Taurus series products can be widely used in LED commercial display field, such as bar screen, chain store screen, advertising machine, mirror screen, retail store screen, door head screen, on board screen and the screen requiring no PC.

Taurus series products are NovaStar’s second generation of multimedia players dedicated to full-color LED displays.

Taurus series products can be widely used in LED commercial display field, such as bar screen, chain store screen, advertising machine, mirror screen, retail store screen, door head screen, on board screen and the screen requiring no PC.

Note: Total memory 8GB, 4GB available to user.
Video Processor
Features

- Supports a wide range of video inputs divided into 4 groups with 8 interfaces, including 1×DVI/HDMI/SDI (allowing you to choose any one of these 3 interfaces), HDMI 1.4/DP1.1 (allowing you to choose any one of these interfaces).
- Input resolution of Input A supports 4K×2K@30Hz. Other inputs support 1920×1080@60Hz which are downward compatible.
- Supports 5 output channels, including 4 groups with 8 interfaces of DVI splicing output and one HDMI preview output.
- The preview interface supports preview of 8 video input signals, and supports overlapping display of information like input resolution, frame rate, etc.
- Output resolution can be set. Splicing width of 4 channels can be up to 15360×600.
- Capable of displaying 6 windows simultaneously at most and the maximum resolution of each window is up to 15360×600@60Hz.
- Width, position, size, etc. are adjustable allowing to add borders to the windows and set border width, color, etc.
- Capable of creating 32 presets which are saved as templates and can be used directly and easily.
- Provides dozens of input source transition effects to enhance and present demo images with professional quality.
- An intuitive color LCD on the front panel and clear button indicator lights simplify the system control operations.
- Supports Genlock synchronization, allowing you to choose any input source or external synchronous signal to achieve frame lock output.
- Supports HD/SD-SDI (Choose one from these inputs)
- HDMI1.4/DP1.1 (Choose one from these inputs)
- HDMI/SDI (Choose one from these inputs)

Specifications

<table>
<thead>
<tr>
<th>Port</th>
<th>Qty</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI1.4/DP1.1</td>
<td>1</td>
<td>Supports 4K+RGB/10-bit, 2560×1600@60Hz (downward compatible).</td>
</tr>
<tr>
<td>HDMI/SDI</td>
<td>4</td>
<td>Supports 1920×1080@30Hz (downward compatible).</td>
</tr>
<tr>
<td>HDMI/SDI</td>
<td>1</td>
<td>US standard, 1920×1080@30Hz (downward compatible).</td>
</tr>
<tr>
<td>HD inputs</td>
<td>1</td>
<td>Input resolution up to 1920×1080@60Hz and downsized. Supports 2D/3D output.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Qty</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVI(DVI-3)</td>
<td>4</td>
<td>Maximum supported resolution of each interface: 1080p (DualLink output is available for DVI1 and DVI3 only).</td>
</tr>
<tr>
<td>HDMI(Type A)</td>
<td>1</td>
<td>Supports input resolution: 1920×1080@60Hz.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Qty</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHERNET(1G)</td>
<td>1</td>
<td>Control interface for connecting upper computer.</td>
</tr>
<tr>
<td>USB(Type-B)</td>
<td>1</td>
<td>Interface for cascading more J6 units.</td>
</tr>
<tr>
<td>USB(Type-A)</td>
<td>1</td>
<td>Interface for cascading more J6 units.</td>
</tr>
</tbody>
</table>
C1, a console specially designed for NovaStar’s terminal video processing products, such as J series, is mainly used for live stage control.

The C1 is designed with two LCD screens. One is used for previewing input sources. The other, together with buttons on the panel, is used to configure the layer size, layer position, input source, output resolution, layer border and input source cropping under each preset.

The C1 is also designed with a joystick and T-Bar. The joystick is used to precisely adjust the size and position of layers. The T-Bar supports adjustment of 1024 levels of layer transparency, finely controlling the transition effects of presets and PVW, PGM for switching.

Thanks to the cool lighted buttons, highly sensitive joystick and T-Bar, plus the two LCD screens, the C1 is extremely easy to operate, making live stage control most convenient.

**Features**

- Supports two LCD screens, one for monitoring and the other for operating. During operating, users can view on one of the LCD screens the input source status, preview status and status of output on LED display, so that the overall situation is under control.
- Supports control of NovaStar video splicing processors.
- Supports screen mosaic, easy mosaic, output image quality adjustment, BKG settings, EDID settings, test patterns, and switching from normal display to blackout with one button press.
- Supports layer editing, layer image quality adjustment, layer border settings, and layer freezing.
- Supports settings of the layer size and position through the joystick and buttons.
- Supports Aux configuration.
- Supports input source cropping.
- Allows for operations, such as FTB, freeze or Take operation, to multiple seamless switchers.
- Supports remote or live control of terminal video processors through RJ45.
- Supports up to 32 presets.
- Supports preset copying, use of preset templates, preset customizing, saving of custom presets, preset data cleanup, backup of preset area on C1 operation panel.
- Supports layer editing, layer image quality adjustment, layer border settings, and layer freezing.
- Supports settings of the layer size and position through the joystick and buttons.
- Supports Aux configuration.
- Supports input source cropping.
- Allows for operations, such as FTB, freeze or Take operation, to multiple seamless switchers.
- Supports remote or live control of terminal video processors through RJ45.
- Supports up to 32 presets.
- Supports preset copying, use of preset templates, preset customizing, saving of custom presets, preset data cleanup, backup of preset area on C1 operation panel.

**Specifications**

<table>
<thead>
<tr>
<th>Port and Button</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet (RJ45)</td>
<td>1</td>
<td>Connects to a USB drive to import USB files.</td>
</tr>
<tr>
<td>USB</td>
<td>1</td>
<td>Used to update program, or connect to the upper computer.</td>
</tr>
<tr>
<td>U-DISK</td>
<td>1</td>
<td>Connects to a USB drive to import USB files.</td>
</tr>
<tr>
<td>Monitor</td>
<td>1</td>
<td>RS-232 serial connector that connects to the upper computer.</td>
</tr>
<tr>
<td>Reset button</td>
<td>1</td>
<td>A pinhole reset button used to reset and restart the C1.</td>
</tr>
</tbody>
</table>

[Image -6x-12 to 1306x616]
N9 is a high-performance multi-screen video switcher independently developed by NovaStar. Using high-performance video processing technologies, the N9 is capable of processing and outputting ultra-high quality images. The N9 also features powerful video signal receiving capability. It can support 9 inputs and 4 DVI outputs at the same time. A single N9 can be cascaded up to 8 units, and multiple N9 units can be cascaded for output.

The N9 can work with NovaStar’s Event console C1 and make the operation of N9 on stage more convenient. What’s more, it can work with the new smart management software V-Can to enable more screen mosaic effects and better satisfy your needs.

Rear Panel

INPUT-2
INPUT-1
INPUT-3
INPUT-4
INPUT-5
INPUT-6
INPUT-7
INPUT-8
INPUT-9

DVI1, VESA standard compliant, 1920×1080@60Hz and downward compatible.
DVI2, VESA standard compliant, 1920×1080@60Hz and downward compatible.
DVI3, VESA standard compliant, 1920×1080@60Hz and downward compatible.
DVI4, VESA standard compliant, 1920×1080@60Hz and downward compatible.
DP1.2, 3840×2160@60Hz and downward compatible.
SDI, 1920×1080@60Hz and downward compatible.
SDI LOOP.

Outputs

HDMI
MVR output, capable of previewing all 9 input sources, PVW and PGM.
DVI1
DVI output. If the output mode is set to Quadlink, this connector is invalid.
DVI2
DVI output. If the output mode is set to Quadlink, this connector is invalid.
DVI3
DVI output. If the output mode is set to Quadlink, this connector is invalid.
DVI4
DVI output. If the output mode is set to Quadlink, this connector is invalid.

ETHERNET (RJ45)
A control connector.
USB (Type-B)
Connects to an upper computer.
USB (Type-B)
Connects to synchronization signals synchronization cascaded units.
Receiving Cards
The high-end and small-size receiving cards of Armor series developed by NovaStar uses multiple unique LED display image processing technologies, such as 18bit+ and ClearView, to greatly improve the display image quality, make the image attractive and vivid, and the display value more visible.

Features

- **18bit+**
  - 4 times higher grayscale performance when low brightness, showing image details even in low light conditions.
  - (A8s, A10s Plus)

- **Precise Grayscale**
  - Gradually measure and correct the gray scale, make the low-gray grayscale more precise, obviously improve the gray noisy point, color block, jump color cast and other issues, restore the true light and shadow changes of the image, and reproduce the pure sense of the visual world.
  - (A8s, A10s Plus)

- **LVDS Transmission**
  - Use the transmission mode of low-voltage differential signaling (LVDS), realizing less data cables between the receiving card’s HUB board and module, longer transmission distance, higher signal transmission quality, better EMC effect and more stable image output.
  - (A4s, A5s, A7s, A9s, A10s Plus, Supported by dedicated firmware)

- **Color Management**
  - Fully demonstrate the advantages of the wide color gamut of LED display, provide professional-grade color accuracy, and accurately present the original picture.
  - (A8s, A10s Plus)

- **Mapping**
  - Display the receiving card ID and Ethernet port information on the cabinet. The user could get the receiving card's location and wiring route, which makes debugging extremely convenient.
  - (A5s, A7s, A9s, A10s Plus)

- **HDR10/HLG**
  - Support HDR10 Optima & HLG, highly restore visual effects, and show stunning visual effects through subtle performance.
  - (A8s, A10s Plus)

- **Free Screen Rotation**
  - Working with the MCTRL R5, the receiving cards support screen rotation at any angles, displaying plentiful and more creative images.
  - (A8s, A10s Plus)

- **Automatic Calibration**
  - After a module has been replaced, the receiving card can automatically read the new module ID and calibration coefficients, and save them to the Flash of the receiving card.
  - (A5s, A7s, A9s, A10s Plus)

- **Precise Grayscale**
  - Gradually measure and correct the gray scale, make the low-gray grayscale more precise, obviously improve the gray noisy point, color block, jump color cast and other issues, restore the true light and shadow changes of the image, and reproduce the pure sense of the visual world.
  - (A8s, A10s Plus)
<table>
<thead>
<tr>
<th>Product Model</th>
<th>A4s</th>
<th>A5s</th>
<th>A7s</th>
<th>A8s</th>
<th>A9s</th>
<th>A10s Plus</th>
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</thead>
<tbody>
<tr>
<td>Resolution (PWM/IC)</td>
<td>256×256</td>
<td>320×256</td>
<td>512×256</td>
<td>512×512</td>
<td>1024×512</td>
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<tr>
<td>RGB Parallel Data Group</td>
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<td>Serial Data Group</td>
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<td>MCM (Memory on module)</td>
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<tr>
<td>Smart Module</td>
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<tr>
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<tr>
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<td>Cabinet Monitoring LCD</td>
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<tr>
<td>Temperature Monitoring</td>
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<td>✓</td>
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<tr>
<td>Power Supply Monitoring</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Monitoring of Ethernet cable communication status (Support only dedicated firmware)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>CE-EMC Class B</td>
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</tr>
</tbody>
</table>

**Firmware Copy** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Configuration**: Restore and Read | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Maintenance Function**: Calibration | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Pixel level color and brightness calibration** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Quick seam correction** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**One-Click Apply Calibration Coefficient in MCM** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Auto Calibration**: Coefficient Backup | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Performance Enhancements**: | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Prepared Picture** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Rotation per 90°** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**EMC Optimizing** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**LVDS Transmission** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**3D function** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Mapping** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**HDR10+** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Color Management** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**ClearView** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Precise grayscale** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**Low Latency** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
**HBR1/HBR2** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
Sometimes even the best products need a helping hand. NovaStar’s accessories are designed to work seamlessly with our products.

Fiber Converter CVT310 / CVT320 45
Fiber Converter CVT4K-S / CVT 4K-M 45
Ambient Brightness Sensor NS060 46
Multifunction Card MFN300 46
Fiber Converter CVT-Rack310 / CVT-Rack320 47
Ambient Temperature Sensor MTH310 48
Monitoring Card MON300 48
**Fiber Converter CVT310 / CVT320**

- 1 optic fiber interface.
- 1 RJ45.
- Power supply: 100 – 240V AC 50/60Hz.
- No need to install the drivers.
- CVT310: Transmission distance up to 300m, by using multi-mode dual-core optic fiber with LC interface.
- CVT320: Transmission distance up to 10km, by using single-mode dual-core optic fiber with LC interface.
- Certification: CE, RoHS, FCC, EAC.

**Fiber Converter CVT4K-S / CVT 4K-M**

- Supports 16-channel Neutrik Ethernet outputs.
- Supports 4-channel optical fiber interfaces (SG fiber adapter). Two of them are master input/output channels and the other two are backups.
- Supports two types of power interfaces (3-pin power socket and PowerCON) with dual-power redundancy backup.
- With various indicator lights on the front panel, each status can be showed clearly.
- AC 100-240V 50/60Hz.
- No need to install the drivers.
- Transmission distance of CVT 4K-S is 10km.
- Transmission distance of CVT 4K-M is 300km.
- Certification: CE, LVD, RoHS, FCC, LJGUL, CB, EAC, IC.

**Ambient Brightness Sensor NS060**

- Ambient brightness detect, 256 levels of auto brightness adjustment.
- Sending card (MSD300, MCTRL300, MCTRL600, PSD100) or multifunction card (MFN300) supported.
- 5m standard cable, 100 meters extend.
- With protection from dust ingress and water jet, it can be used in an outside setting.
- Certification: CE, RoHS.

**Multifunction Card MFN300**

- 8 power switch management.
- 4 light sensor/ambient temperature sensor interface.
- Auto power control of fan/air condition/LED display based temperature.
- Audio output integrated.
- Certification: CE, RoHS.
Fiber Converter
CVT-Rack310 / CVT-Rack320

- 16 optic fiber interface.
- 16 RJ45.
- Power supply: 100 ~ 240V AC 50/60Hz.
- No need to install the drivers.
- CVT-Rack310: Transmission distance up to 300m, by using multi-mode dual-core optic fiber with LC interface.
- CVT-Rack320: Transmission distance up to 15km, by using single-mode dual-core optic fiber with LC interface.
- Certification: CE, FCC, RoHS, IC.

Ambient Temperature Sensor MTH310

- Detect ambient temperature.
- Multi-function card supported.
- 5m standard cable, 100 meters extend.
- Waterproof.
- Certification: CE, RoHS, FCC.

Monitoring Card MON300

- Cabinet temperature, humidity and smoke monitoring.
- 8 power supply voltage monitoring.
- Ribbon cable status monitoring.
- Cabinet door open/close status monitoring.
- 4 fan speed monitoring.
- LED error status monitoring.
- Certification: CE, RoHS.
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