As one of the leading LED display solution providers around the world, NovaStar commits to promoting industrial upgrading of the display industry through technology.

With headquarters located in the beautiful ancient capital - Xi’an, Nova has 44 branches all around the world, serving over 10,000 customers. With continuously strengthened innovation ability, outstanding customization capacity, excellent service capability, and improving delivery ability, we have won trust of worldwide customers!

We have multiple product lines, including product lines of LED display synchronous control system, LED display asynchronous control system, LED display point-by-point calibration system, cloud-based information publishing and management system, etc.; these products rely on each other, forming a complete ecosystem.

Through our constant self-dependent innovation, we have possessed more than 500 proprietary intellectual property rights in LED display control, cloud computing, and other fields. Nova has successively won "Xi’an Award for Science and Technology" and "Shaanxi Award for Science and Technology".

Nova team is young, professional, diligent, wise, and full of social responsibility. We gain respect through our own efforts, and we have the sense of social responsibility. Nova Tech has successively won titles of "Excellent Innovative Enterprise of Xi’an Software Park", "Outstanding High-growth Enterprises of Xi’an Software Park", "the Most Promising Enterprises of Xi’an Software Park", and "Strategic Emerging Industrial Enterprise of Xi’an High-Tech Industrial Development Zone".

We believe that only the most leading technology, the most complete solution, the friendliest product, the best quality, and the most professional service can realize the commission and target of Nova. In the future, all Nova people will continue to commit to promoting LED display industry through constant innovation!
History
Through constant innovation, NovaStar commits to promote industrial upgrading of LED display industry.

2009
- NovaStar is headquartered in the ancient capital of Xi’an, China.
- As the biggest live window of the 2008 Beijing Olympic Games, Pangu Plaza LED display was successfully supported by the control system from NovaStar.

2010
- The display control system and pixel-by-pixel calibration system from NovaStar were successfully used in Guangzhou Asian Games. NovaStar won title of “Excellent Service Guaranteed Enterprise” for its excellent products and professional services.

2011
- NovaStar was awarded the Xi’an Award for Science and Technology.
- NovaStar supported Xi’an International Horticultural Expo with its display control system and pixel-by-pixel calibration system.

2012
- NovaStar was awarded the Shaanxi Award for Science and Technology.
- NovaStar supported Xi’an International Horticultural Expo with its display control system and pixel-by-pixel calibration system.

2013
- NovaStar launched asynchronous full color LED control system.
- NovaStar released NovaCloud cluster display management platform.
- Nova control system was applied in Xintiandi indoor LED display project, Chengdu (4080 square metres).

2014
- NovaStar won title of “Strategic Emerging Industrial Enterprise of Xi’an High-Tech Industrial Development Zone”.
- The pixel-by-pixel calibration system has a global market share above 95%.
- NovaStar won title of “Deloitte’s 2014 Technology Fast 50 Awards”.

2015
- NovaStar won title of “Strategic Emerging Industrial Enterprise of Xi’an High-Tech Industrial Development Zone, 2014”.
- NovaStar, a famous trademark filed in 2015.
- All-in-one controller, believed to be the first of its kind.

2016
- Nova control system powered the LED displays of the Olympic Games Rio, 2016.
- NovaStar was judged as “Little Giant of Science & Technology Enterprise”.
- The shipment of video processor was an industry first.
- The synchronous system has a domestic market share above 50%.
Brand Service
Continuing Excellent Service

Technological Innovation
Innovation pushes industry and drives future

7 × 24
High-quality Service

Patents related to NovaStar in field account for 90% and are growing at an annual pace of 30%.

Patents (up to 2016)

<table>
<thead>
<tr>
<th>Patent for Invention</th>
<th>Utility Model</th>
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Intellectual Property Rights (up to 2016)

<table>
<thead>
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<th>Product Registration</th>
<th>Trademark</th>
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### Controller

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<tr>
<td>VX2U</td>
<td>MCTRL660</td>
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<tr>
<td>VX4U</td>
<td>MCTRLR5</td>
</tr>
<tr>
<td>VX4S</td>
<td>MCTRL600</td>
</tr>
<tr>
<td></td>
<td>MCTRL300</td>
</tr>
<tr>
<td></td>
<td>MSD300</td>
</tr>
</tbody>
</table>

### Multimedia Player

- PBOX150
- PBOX100
- PSD100-WiFi
- PSD100

### Receiving Card

<table>
<thead>
<tr>
<th>Receiving Card Of Armor Series</th>
<th>EMC Receiving Card (Class B)</th>
<th>Regular Receiving Card (Class A)</th>
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<tbody>
<tr>
<td>A4s</td>
<td>MRV560</td>
<td>MRV300</td>
</tr>
<tr>
<td>A5s</td>
<td>MRV470</td>
<td>MRV320</td>
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<tr>
<td>A7s</td>
<td>MRV420</td>
<td>MRV330</td>
</tr>
<tr>
<td>A8s</td>
<td>MRV410</td>
<td>MRV360</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MRV210</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MRV220</td>
</tr>
</tbody>
</table>

### Accessories

- Fiber Converter CVT310 / CVT320
- Fiber Converter CVT-Rack310 / CVT-Rack320
- Fiber Converter CVT4K-S
- Splitter DIS-300
- Ambient Brightness Sensor NS060
- Ambient Temperature Sensor MTH310
- Multifunction Card MFN300
- Monitoring Card MON300

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Nova control system supported the Electric Daisy Carnival, commonly known as EDC, one of the biggest electronic dance music festivals in the world.

*Image: NEP Screenworks*
All-in-1 Controller

Video Processor
Switcher
Windows PC
Sending Cards

No need any longer!

VX2U · VX4U · VX4S

- No PC required for LED display configuration
- Front Panel / LAN / WLAN / USB control
- Support DVI, HDMI, VGA, DP, CVBS, SDI inputs
- Broadcast-level scaling, seamless sync mosaic
- Auto-fit to LED display by shortcut key

Features of VX series products

- **Professional video processor + professional controller:**
  All-in-1, video processing and controlling together, a pioneering technology.

- **Unlimited daisy chain supports Ultra-large LED Display:**
  One device supports 2.3 million pixels with 4 Ethernet port outputs;
  User-defined resolution, width up to 3,840 pixels;
  Unlimited daisy chain, seamless sync mosaic.

- **Abundant interfaces + multiple switching effects:**
  Front Panel / LAN / WLAN / USB control;
  DVI, HDMI, VGA, DP, CVBS, SDI input;
  Fade in and fade out, instant switchover, and other effects.

- **Broadcast-level scaling, auto-fit to LED Display.**

- **Screen configuration without PC.**

- **Seamless mosaic:**
  Professional DVI loop; seamless sync mosaic.

- **Picture-in-picture:**
  Supports PIP and PBP.

- **Backup:**
  Nova controller’s backup.

- **User-defined functional keys:**
  Functional keys can be defined based on users’ habits.

- **Template layout customization:**
  Template layouts defined by users can be saved.

---

**VX2U**

- Loading capacity: 1.3 million pixels, with width up to 3,840 pixels
- Outputs: Ethernet port × 2
- Inputs: HDMI, DVI, VGA × 2, CVBS × 2, DP, USB
- Video Monitor: VGA, DVI
- Video Loop: DVI Loop
- Mosaic & Daisy chain supported

**VX4U**

- Loading capacity: 2.3 million pixels, with width up to 3,840 pixels
- Outputs: Ethernet port × 4
- Inputs: HDMI, DVI, VGA × 2, CVBS × 2, DP, USB
- Video Monitor: VGA, DVI
- Video Loop: DVI Loop
- Mosaic & Daisy chain supported

**VX4S**

- Loading capacity: 2.3 million pixels, with width up to 3,840 pixels
- Outputs: Ethernet port × 4
- Inputs: HDMI, DVI, VGA × 2, CVBS × 2, DP, SDI
- Video Monitor: VGA, DVI
- Video Loop: DVI Loop, SDI Loop
- Mosaic & Daisy chain supported
## VX2U

### Input Index

<table>
<thead>
<tr>
<th>Port</th>
<th>Number</th>
<th>Resolution Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVBS</td>
<td>2</td>
<td>PAL/NTSC</td>
</tr>
<tr>
<td>VGA</td>
<td>2</td>
<td>VESA Standard, support max. 1920 × 1200@60Hz input</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>VESA Standard (support 1080i input), support HDCP</td>
</tr>
<tr>
<td>USB</td>
<td>1</td>
<td>Multimedia file formats: avi, mp4, mpg, mkv, mov</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</td>
<td>VESA Standard/CEA-861 standard, in accordance with HDMI-1.3 standard, support HDCP</td>
</tr>
<tr>
<td>DP</td>
<td>1</td>
<td>VESA Standard</td>
</tr>
</tbody>
</table>

### Output Index

<table>
<thead>
<tr>
<th>Port</th>
<th>Number</th>
<th>Resolution Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVI LOOP</td>
<td>1</td>
<td>Consistent with DVI input</td>
</tr>
<tr>
<td>VGA</td>
<td>1</td>
<td>Custom output resolution (Bandwidth optimization)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. output resolution: 1280x1024@60Hz (1.3 million pixels)</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>Max. horizontal resolution up to 3840 pixels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. vertical resolution up to 1920 pixels</td>
</tr>
</tbody>
</table>
### Input Index

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<td>1</td>
<td>VESA Standard (support 1080i input), support HDCP</td>
</tr>
<tr>
<td>USB</td>
<td>1</td>
<td>Multimedia file formats: avi, mp4, mpg, mkv, .mov, .vob</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</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>VESA Standard</td>
</tr>
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### Output Index

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<thead>
<tr>
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<tr>
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<td>1</td>
<td>Consistent with DVI input</td>
</tr>
<tr>
<td>VGA</td>
<td>1</td>
<td>Custom output resolution (Bandwidth optimization)</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>Max. horizontal resolution up to 3840 pixels, Max. vertical resolution up to 1920 pixels</td>
</tr>
</tbody>
</table>

Max. output resolution:
1920×1080@60Hz (2.3 million pixels)
### Input Index

<table>
<thead>
<tr>
<th>Port</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
<td>PAL/NTSC</td>
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<tr>
<td>VGA</td>
<td>2</td>
<td>VESA Standard, support max. 1920 ×1200×60Hz input</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>VESA Standard (support 1080i input), support HDCP</td>
</tr>
<tr>
<td>SDI</td>
<td>1</td>
<td>480i, 720p, 1080i/p</td>
</tr>
<tr>
<td>HDMI</td>
<td>1</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>VESA Standard</td>
</tr>
</tbody>
</table>

### Output Index

<table>
<thead>
<tr>
<th>Port</th>
<th>Number</th>
<th>Resolution Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVI LOOP</td>
<td>1</td>
<td>Consistent with DVI input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1280×1024@60Hz, 1440×900@60Hz, 1680×1050@60Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1600×1200@60Hz, 1600×1200@60Hz – Reduced</td>
</tr>
<tr>
<td>VGA</td>
<td>1</td>
<td>1920×1080@60Hz, 2560×1440@60Hz, 2048×1152@60Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1920×1200@60Hz, 2304×1152@60Hz, 2048×1152@60Hz</td>
</tr>
<tr>
<td>DVI</td>
<td>1</td>
<td>1024×1280@60Hz, 1536×1536@60Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-defined output resolution (Bandwidth optimization)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Horizontal resolution maximum 3840 pixels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vertical resolution maximum 1920 pixels</td>
</tr>
<tr>
<td>SDI</td>
<td>1</td>
<td>480i, 576i, 720p, 1080i/p Consistent with SDI input</td>
</tr>
</tbody>
</table>

---

**VX4S**

- SDI HD-Camera
- VGA+2 PC
- CVBS×2 TV signal
- 4 lines of LED outputs
- LED screen
- DVI Loop
- DVI OUT
- Monitor
- USB Port
- cascading unit
- DVD
- DP PC
- HDMI DVD
- PC
NovaPro HD
For high-end rental application
Control as you wish

Product Feature:
- Abundant video inputs: CVBS, VGA, SDI, DVI, HDMI and DP
- PC free screen connection
- DMX512 protocol integrated
- GenLock interface
- Dual power supply
- USB and Ethernet control
- Montage setting for multiple units
- Smart Scaler

Professional controller + Professional processor
- Powerful in processing
- Professional in control
- Friendly user-interface

Smart scaler
Rich in input and output
Power supply backup
DMX control
GenLock
Neutrik connectors
**Inputs**

- **SDI**
  - 3G-SDI, HD-SDI, SD-SDI1480, 576i, 720p, 1080i/p
- **DVI**
  - Single link DVI, up to 1920×1200@60Hz, support both RGB and YCbCr, progressive or interlaced
- **HDMI**
  - HDMI 1.3, up to 1920×1200@60Hz, HDCP, support both RGB and YCbCr, progressive or interlaced
- **DP**
  - DP 1.1
- **CVBS**
  - NTSC/PAL, CVBS progressive or interlaced, 10-bits/color Sampling
- **VGA**
  - VESA, up to 1920×1200@60Hz

**Ethernet Output**

- Up to 4 Ethernet outputs

**HDMI Output**

- For monitoring, resolution customizable

**Power Supply**

- 100-250V~ , 50/60 Hz, 0.65A max.

**Dimensions**

- 2U19 rack chassis
Nova 4K Controller - MCTRL4K
Real 4K@60Hz

Ultra Large Capacity
Resolution: 4K×2K@60Hz
Maximum width up to 8K

Multiple Outputs
Neutrik EtherCON×16
OPT Ports×4

Webpage Control
Wireless remote control

Multiple Video Inputs
DP1.2×1, HDMI 2.0×1
Dual DVI×2

4K UHD
3840×2160@60Hz
Source Input: DP1.2 / HDMI 2.0

Maximum width up to 8K
7680×1080@60Hz
Source Input: Dual DVI×2

Optical fiber solution with CVT4K-S
CVT4K-S
Up to 10km
Up to 10km

Hot backup
Controller / Sending Card

FCC

Free Rotation, Extraordinary Creativity

Rotation Controllers

Free Rotation
Simple to operate! LED panel can rotate in any area at any angle, providing infinite possibility for creative display.

Super-long loading capacity
The loading capacity of a single set can reach up to 4K×1K@60Hz.

Long-distance optical transmission
The distance of optical transmission can reach about 10 kilometers, presenting more stable images.

Input Interface
HDMI 1.4, Dual DVI, 6G SDI

R5 without creativity is no real R5.
Designed for Creative Display
MCTRL660
No PC required for LED display configuration

- Cabinet config files saving and sending
- Brightness, Color & Test pattern adjustable by knob
- Full HD pixels capacity
- HDCP & 12-bit HDMI

Product Feature

- No PC required for LED display configuration.
- LED display brightness adjustable directly with knob.
- 12-bit / 10-bit HDMI input, DVI input.
- HDMI / DVI output, for cascading or monitoring.
- HDMI / external audio input.
- HDCP Blu-Ray input.
- Resolutions supported: 2048×1152@60Hz, 1920×1200@60Hz, 2560×960@60Hz. (8-bit).
- Resolutions supported: 1440×900@60Hz. (12-bit/10-bit).
- Customized resolution supported: maximum width/height up to 3840 pixels.
- Cascading supported.
- Independent power supply.
- 19” 1.5U standard cabinet.
**MSD300 / MCTRL300**

- 1 DVI input.
- External audio input.
- 2 RJ45 for data output, hot backup supported.
- USB control interface, cascading supported.
- Resolutions supported: 1280×1024@60Hz, 1024×1200@60Hz, 1600×848@60Hz, 1920×712@60Hz, 2048×668@60Hz, or customized resolution, with maximum width/height up to 3840 pixels.
- 1 light sensor interface, for auto brightness adjustment.
- MSD300 Certification: CE, RoHS

- Independent power supply
- MCTRL300 Certification: CE, RoHS, EAC, FCC, IC

**MCTRL600**

- 12-bit / 10-bit HDMI input, DVI input.
- HDMI / external audio input.
- HDCP Blu-Ray input.
- Resolutions supported: 2048×1152@60Hz, 1920×1200@60Hz, 2560×960@60Hz (8-bit).
- Resolutions supported: 1440×900@60Hz. (12-bit/10-bit)
- Customized resolution supported: maximum width/height up to 3840 pixels
- 1 light sensor interface, for auto brightness adjustment.
- Cascading supported.
- Certification: CE, RoHS, FCC, EAC, IC
### Controller / Sending Card

#### Product Image

- [Image 1](#)
- [Image 2](#)
- [Image 3](#)
- [Image 4](#)

#### Product model
- MSD300
- MCTRL300
- MCTRL600
- MCTRL660
- MCTRLR5
- MCTRL4K

#### Product type
- Sending card
- Controller
- Controller
- Controller
- Controller
- Controller

#### Input resolution
- MSD300: 1280×1024@60Hz, 1024×1200@60Hz, 1920×1200@60Hz
- MCTRL300: 1.3million pixels, 1280×1024@60Hz
- MCTRL600: 2.3million pixels, 1280×1024@60Hz
- MCTRL660: 2.3million pixels, 1280×1024@60Hz
- MCTRLR5: 4.6million pixels, 1280×1024@60Hz
- MCTRL4K: 9.2million pixels, 1280×1024@60Hz

#### Loading capacity
- 1.3million pixels
- 1.3million pixels
- 2.3million pixels
- 2.3million pixels
- 4.6million pixels
- 9.2million pixels

#### Supply voltage
- MSD300: 5V
- MCTRL300: AC-100-240V-50/60HZ
- MCTRL600: AC-100-240V-50/60HZ
- MCTRL660: AC-100-240V-50/60HZ
- MCTRLR5: AC-100-240V-50/60HZ
- MCTRL4K: AC-100-240V-50/60HZ

#### Control interface
- USB
- USB
- USB
- USB
- USB / TCP/IP
- USB / TCP/IP

#### Video interface
- DVI
- DVI
- HDMI / DVI
- HDMI / DVI
- HDMI / DVI
- HDMI / DVI

#### Audio input
- 3.5mm audio interface
- 3.5mm audio interface
- HDMI Input, 3.5mm audio interface
- HDMI Input, 3.5mm audio interface
- HDMI Input
- HDMI Input

#### Video format
- RGB
- RGB
- RGB, YCbCr4:2:2, YCbCr4:4:4
- RGB, YCbCr4:2:2, YCbCr4:4:4
- RGB, YCbCr4:2:2, YCbCr4:4:4
- RGB, YCbCr4:2:2, YCbCr4:4:4

#### Output interface
- RJ45×2
- RJ45×2
- RJ45×4
- RJ45×4
- Neutrik EtherCON×8 / OPT Ports×2
- Neutrik EtherCON×16 / OPT Ports×4

#### Video source grayscale
- 8bit
- 8bit
- 8/10/12bit
- 8/10/12bit
- 8/10/12bit
- 8/10/12bit

#### Light sensor
- 1 channel
- 1 channel
- 1 channel
- /
- /
- /

#### Cascading
- Support
- Support
- Support
- Support
- Support
- Support

#### Certification
- CE, RoHS, EAC, FCC, IC
- CE, RoHS, EAC, FCC, IC
- CE, RoHS, FCC, UL, EAC
- CE, RoHS, FCC, UL, EAC
- CE, RoHS, FCC, UL, EAC
- CE, RoHS, FCC, UL, EAC

### Single/multiple controller hot back-up and cascade supported
Multimedia Player

- Wireless access to LED display by phone or PC (Up to 300 feet)
- Multiple WiFi modes: WiFi Hotspot, WiFi Station, AP+Station
- Multiple media formats
- SD card for storage, 32G at maximum
- Support color calibration
- Support remote publishing and monitoring, NovaCloud & NovaCare
- Android App available
  > Create, edit, publish playlists
  > Prestore playlists
  > Change LED display’s brightness
  > Power supply control of LED display

PSD100 / PSD100-WiFi

- Control method: Network
- Cascading receiving card: Support
- Storage extension method: USB flash disk/SD card
- Internal memory: 512MB
- Capacity of a single card: 320×256
- Capacity of cascading receiving cards: 512×1024, 960×600, 800×700, 1024×576, 1520×384, 2048×256, 704×800, 904×640, 1120×500
- Network access methods: 3G, Wi-Fi, ADSL
- Certification: CE, RoHS, FCC

- WiFi Mode: AP+Station
- Certification: CE, RoHS, MIC, SIRIM

PBOX100

- Control method: Network
- Cascading receiving card: Support
- Storage extension method: USB flash disk/SD card
- Internal memory: 512MB
- Capacity of a single card: 320×256
- Capacity of cascading receiving cards: 512×1024, 960×600, 800×700, 1024×576, 1520×384, 2048×256, 704×800, 904×640, 1120×500
- Network access methods: 3G, Wi-Fi, ADSL
- Certification: CE, RoHS, PSE, FCC
Making commercial LED display more valuable

PBOX150

**Compatible:** Synchronous & asynchronous modes. Supports 1080P input when in synchronous mode. HDCP compliant.

**Succinct:** Auto-fit to LED display with HDMI input. Advertising machine can be played independently or cascaded with HDMI Loop.

**Stable:** Supports redundancy. Able to switch manually/as scheduled between two modes.

**Smart:** Multiple WiFi modes: WiFi Hotspot, WiFi AP+Station. Supports remote publishing and monitoring. NovaCloud & NovaCareUSB available.

**Loading capacity:** PBOX150 supports the load capability of 600,000 pixels. The maximum width supported is 2048 pixels and maximum height supported is 1024 pixels.

Application Scenarios

- Suitable for the occasion demanding high stability. Supports redundancy.
- Suitable for traditional digital signage users who can use the existing publishing system to control the LED display as well as carry out remote monitoring.
- Suitable for advertising machines and mirror screens. Able to play independently or be cascaded.
Receiving Card Of Armor Series
Highly improving the image quality on the display

18bit+
The latest LED display image processing technologies from Nova. Effectively improve grayscale performance under low brightness, showing more exquisite and more expressive images.

ClearView
By adjusting the texture, size and contrast of images in different areas to further enhance the image details.

Smart Gamma Correction
Gamma correction is automatically applied according to the display brightness, achieving a better grayscale performance and providing clearer pictures.

Rotation
With MCTRL R5, the display can rotate in any area at any angle with creative way.

RCFG File Restore
One-key rcfg file store, making display normal instantly.

Firmware Copying
Auto backup and read back of firmware, customized version is within easy reach.

Auto Calibration
After replacing modules, the calibration coefficients can be automatically applied, simple and quick.

Calibration Coefficients with Dual Backup
One-key reset disorder application parameters, making cabinets in order.

Mapping
The serial number and Ethernet port can be seen on the cabinet for easy debugging.

Integrated Network
Offering the overall solution for the difficulty, poor uniformity of product, short-distance transmission of cables, unsteady signal and high bit error rate of Hub layout.
## Application Scenarios

Indoor Fixed Installation / Outdoor Fixed Installation / Rental

<table>
<thead>
<tr>
<th>Product model</th>
<th>A4s</th>
<th>A5s</th>
<th>A7s</th>
<th>A8s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product model</strong></td>
<td>Basic</td>
<td>Enhance</td>
<td>High Resolution</td>
<td>High Performance</td>
</tr>
<tr>
<td><strong>Hardware Interface</strong></td>
<td>High density connector</td>
<td>High density connector</td>
<td>High density connector</td>
<td>High density connector</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>256×256</td>
<td>256×256</td>
<td>320×288</td>
<td>256×256</td>
</tr>
<tr>
<td><strong>RGB data output</strong></td>
<td>24 groups</td>
<td>32 groups</td>
<td>32 groups</td>
<td>32 groups</td>
</tr>
<tr>
<td><strong>MOM Interface</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Smart Module</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Pixel level color and brightness calibration support</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Receiving Card Backup Support</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Power Supply Backup Support</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### New Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>A4s</th>
<th>A5s</th>
<th>A7s</th>
<th>A8s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware Backup and Read</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RCFG Backup and Read</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Calibration Coefficient Backup</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Auto Calibration</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cabinet Monitoring LCD</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>90° Rotation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mapping</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### Advanced Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>A4s</th>
<th>A5s</th>
<th>A7s</th>
<th>A8s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Screen Configuration (Need Infrared Sensor)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>18bit+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Smart Gamma</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>ClearView</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Free Rotation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Low latency</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>CE-EMC, Class B, RoHs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Regular Receiving Card (Class A)

<table>
<thead>
<tr>
<th>Product model</th>
<th>MRV300</th>
<th>MRV320</th>
<th>MRV330</th>
<th>MRV210</th>
<th>MRV220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>256×226</td>
<td>256×226</td>
<td>256×226</td>
<td>256×226</td>
<td>256×226</td>
</tr>
<tr>
<td>RGB data output</td>
<td>20 groups</td>
<td>20 groups</td>
<td>24 groups</td>
<td>20 groups</td>
<td>24 groups</td>
</tr>
<tr>
<td>Monitoring card</td>
<td>-</td>
<td>Support</td>
<td>-</td>
<td>Support</td>
<td>-</td>
</tr>
<tr>
<td>MOM Interface</td>
<td>-</td>
<td>-</td>
<td>Support</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Pixel level color and brightness calibration supported
- LED ball, irregular-shaped LED display supported
- Irregular-design LED module supported
- Anti-ghosting
- Cabinet temperature monitoring
- Power voltage monitoring
- Working status monitoring
- Color reproduction
- Color space matching
- Working voltage 3.3V~5.0V
- Support MBI, Chipone, SUM, MY, TI, Bright Wei, Silan driver IC

RoHS, CE EMC compliant (Class A)

### EMC Receiving Card (Class B)

<table>
<thead>
<tr>
<th>Product model</th>
<th>MRV560</th>
<th>MRV410</th>
<th>MRV420</th>
<th>MRV470</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>256×226</td>
<td>256×226</td>
<td>256×226</td>
<td>256×226</td>
</tr>
<tr>
<td>RGB data output</td>
<td>20 groups</td>
<td>24 groups</td>
<td>28 groups</td>
<td>24 groups</td>
</tr>
<tr>
<td>Monitoring card</td>
<td>Support</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MOM Interface</td>
<td>Support</td>
<td>-</td>
<td>-</td>
<td>Support</td>
</tr>
</tbody>
</table>

- Pixel level color and brightness calibration supported
- LED ball, irregular-shaped LED display supported
- Irregular-design LED module supported
- Anti-ghosting
- Cabinet temperature monitoring
- Power voltage monitoring
- Working status monitoring
- Color reproduction
- Color space matching
- Working voltage 3.3V~5.0V
- Support MBI, Chipone, SUM, MY, TI, Bright Wei, Silan driver IC

RoHS, CE EMC compliant (Class B)
**Fiber Converter CVT310 / CVT320**

- 1 optic fiber interface.
- 1 RJ45.
- Power supply: 100 ~ 240V AC 50/60Hz.
- No need to install the drivers.
- Certification: CE, RoHS, FCC, EAC
- CVT310: Transmission distance up to 300m, by using multi-mode dual-core optic fiber with LC interface.
- CVT320: Transmission distance up to 15km, by using single-mode dual-core optic fiber with LC interface.

**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.
- Certification: CE, FCC, RoHS, IC
- 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.

**Fiber Converter CVT4K-S**

- 16 optic fiber interface.
- Supports 4-channel optical fiber interfaces. 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.
- Certification: EMC, LVD, RoHS, FCC, UL/CUL, CB, EAC, IC
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

Ambient Temperature Sensor MTH310

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

Ambient Brightness Sensor NS060

- Ambient brightness detect, 256 levels of auto brightness adjustment.
- Sending card (MSD300, MCTRL300, MCTRL600), PSD100 or multi-function card (MFN300) supported.
- 5m standard cable, 100 meters extend.
- IP68 protection.
- Certification: CE, RoHS

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

Splitter DIS-300

- 1 in 8 out or 2 in 4 out, automatic switching.
- Each RJ45 port can be independently adjusted.
- No need to install the drivers.
- Certification: CE, RoHS
1. Nova Solution for Rental LED Display / 46
2. Pixel Level LED Display Calibration System / 50
3. NovaiCare / 57

Nova Solution for Rental LED Display

Excellent reliability
Super large display supported
Perfect image quality

- Pixel Level Color / Brightness Calibration
- Smoother Gray Scale & High Refresh Rate (3840Hz)
- True Color Reproduction
- Advanced Hot Backup Technology
- Super Large Display Supported (1920×1200@60Hz, 2048×1152@60Hz)
- Flexible Card Replacement
- Gray Scale First Mode

Renew old displays
After three years of use, can display still look as good as new?
Can a display still be sold at a good price after 3 years of use?

Nova Pixel Level Color/Brightness Calibration Technology can help an old LED display to achieve excellent image quality again by significantly increasing its brightness and color uniformity. With excellent image quality, the service life of the display is effectively prolonged and value to the business is increased.
**Mixed use of cabinets from multiple batches**
Nova Color Matching Technology can perfectly solve the problem of mixed use of cabinets from multiple batches in one LED display, thus guaranteeing excellent uniform image quality.

**True Color Reproduction**
Reproduce and present true color.

**Smoother Grayscale & High Refresh Rate**
Nova’s Smooth Grayscale & High Refresh Rate Technology guarantees outstanding image representation of a LED display. Smooth pictures without dim or bright lines can be obtained from cameras even with fast shutter speeds.

**Grayscale First Mode**
When working at low brightness, with normal control system, the gray scale changes from black to white is jumping because of losing gray scale. But with nova control system, the gray scale is intact and smooth.

**Hot backup**
LED displays with common control systems suffer continuous flashing when the hot backup function is activated. Nova Hot Backup Technology is mature. When any system component fails, control system will automatically switch to hot backup without flashing or dark on the display.

**Rental Specialist**
Super Large LED Display Supported
- Screen connection configurable without PC.
- Screen brightness adjustable directly with knob.
- 12-bit/10-bit HDMI input, DVI input.
- HDCP Blu-ray input.
- Resolutions supported: 2048×1152@60Hz, 1920×1200@60Hz, 2560×960@60Hz. (8-bit)
- Cascading supported.
- 18-bit gray scale processing and presentation.
- For a super large LED display with Nova control system, the quantity of system components will only be 1/2~1/3 of that of standard control systems. With much fewer components, the reliability of the display with Nova control system can be significantly improved.

**Flexible Card Replacement**
Any receiving card in Nova control system can be replaced directly when it is broken. The display goes return to normal right after card replacement, no software configuration required.
Nova Standard Calibration System
It can be applied to all the LED displays. Offering a better calibration effect with reasonable price. Featuring simple operation and high efficiency.

- Bright dark line correction method
- One-key start
- Maximum pixels for one calibration: 192 × 128
- Maximum area for one calibration: 2K × 1K
- Calibration speed: one minute/per cabinet, 200,000 pixels/half an hour.

- Cabinet calibration and full-screen calibration are applicable.

HS Calibration System
It can eliminate color difference perfectly and create a more exquisite, more transparent and better view.

It applies in particular to small-spacing display below P3.

- XYZ color data collection and processing
- Blue and white balance, achieving a better uniformity of blue and white.
- Bright dark line correction method
- One-key start
- Maximum pixels for one calibration: 340 × 256
- Maximum area for one calibration: 4K × 3K

- Cabinet calibration and full-screen calibration are applicable.
Pixel Level LED Display Calibration System

We have 8 years of calibration experience. Until the end of 2014, we sold 1000 sets of Nova calibration system. Every year, Nova’s technical supporting engineers calibrate more than 20,000㎡ LED displays. Until now, Nova calibration system calibrated more than 530,000㎡ LED displays.

There are 30 service stations nationwide providing calibration services. Professional cabinet calibration technicians provide services such as: Help you to get consultation and use the cabinet calibration system. Help you to learn some common calibration knowledge. Help you to learn the new features of new version.
FEATURES

- **Fast Calibration Technology**
  This technology greatly increases the area which can be calibrated by the camera at a time. It could calibrate 2K display at a time.
  - HS Calibration System
    - maximum area for one calibration: 4K×3K
  - Nova Standard Calibration System
    - maximum area for one calibration: 2K×1K

- **Imaging Auto Analysis and Adjustment Technology**
  After confirming camera’s position, calibration system will adjust the camera’s aperture, exposure time and display brightness automatically until the images meet the conditions of calibration analysis.

- **Bright and Dark Lines Elimination Technology**
  There often exist bright or dark lines among cabinets and modules in the small pitch LED Display. Nova calibration system can detect these bright and dark lines and eliminate them perfectly.

- **High Precision Color Calibration Technology**
  The fifth generation of color calibration technology developed by Nova enables camera’s color aberration recognition accuracy to reach the accuracy level of raster colorimeter. Color calibration accuracy is further improved. Mixed with multi-bin, this technology could reach even better calibration result.

  Nova calibration accuracy = CS2000 accuracy

- **Full- automatic Calibration Technology**
  When starting the calibration, the six steps of images capturing, images processing, calibration coefficients generating, sending and uploading will be done automatically.

- **Coefficients Quick Uploading Technology**
  Coefficients could be uploaded to the hardware within 20 seconds no matter how big the display is and how many the calibration coefficients are.

- **Lightweight Data Storage Technology**
  Smaller space, better speed: 256×256 pixel calibration coefficients, completing storage within 3 to 4 seconds.

- **Cabinet Calibration Technology**
  Calibrate every cabinet before all cabinets leave the factory. When they are assembled randomly, the whole LED display can get high brightness and color uniformity.

CABINET CALIBRATION TECHNOLOGY

Cabinet calibration means to calibrate cabinets one by one before they leave the factory. This is both a technology and solution that guarantees display’s uniformity when cabinets are assembled randomly on site. There are 3 solutions for different applications.

- **Regular Cabinet Calibration Solution**
  Simple, efficient, one-button start, full-automatic processing, easily realize any assembling.

- **Rental Cabinet Calibration Solution**
  Regular cabinet calibration solution & colorimeter guarantees cabinet’s uniformity even when the cabinets are used for different times and from different batches.

- **Two Batches Cabinets Calibration Solution**
  Introducing human eye’s adjustment accuracy into calibration process, the accuracy is much higher than professional raster colorimeter, achieving the best calibration effect when two batches cabinets assembled as one LED display.
CALIBRATION ON SITE

- **Arc Display Calibration Solution**

- **Irregular Display Calibration Solution**

- **Extra-large Display Calibration Solution**

- **Module Replacing Calibration Solution**
  When some problems occur in the module being used, the brightness and color of the new module which is used to replace the failure one will be very different to its surrounding modules. This solution only calibrates the new module and solves the problem of uniformity within 3 minutes.

- **Super Fast Calibration Solution of the Whole Display**
  It is also very efficient to calibrate the whole display at one time without partitioning. It is suitable for calibration on-site in emergency.

- **Fast Adjustment of Bright and Dark Lines Solution**
  This will solve the problem of display’s bright and dark lines problem caused by cabinets assembling. No calibration equipment and calibration specialist required. Anyone can do it. The whole adjustment process is very easy.

**Operation Interface**

1. Choose the border

2. Adjust

3. Save to hardware

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55 56

Hailong Building, Zhongguancun, Beijing, L: 78.36m, W: 6.4m, 500 ~ 20

Chongqing General Trading Group

2013.08 Global Center, Chengdu, 4080 ~ P25
Comprehensive Status Monitoring

Know everything about screens at anytime and anywhere

Check status of screens at anytime and anywhere

- Monitoring working status of sending card, receiving card, monitoring card and multi-function card.
- Detecting temperature, humidity, smoke around the cabinets
- Monitoring power voltage of cabinets, fan speed, LED point status, and ribbon cable status.

Timely Email Alarm

Accurate Positioning, timely Alarm

Accurate to every LED to know the problems of screens timely

- After Comparing and analyzing the real time status with the historical status of LED displays, the monitoring servers will notice the potential problems and phenomenon timely.

Real-time Remote Monitoring

On-site image in real time

No need to go on site anymore

- Know on-site status by checking comprehensive monitoring data and on-site image.
Efficient Remote Control

With real field data everything is under control perfectly
Telecommuting is no longer a dream
◆ Support remote adjustments of working parameters of the display, such as brightness of the display, volume of speaker, etc.

Flexible Authorization Transfer

Flexible authorization allocation and convenient transfer
You can authorize others to view the screen
◆ Status of the display can authorised to others, display can be transferred to others for management.

Detailed Health Report

For now and for the future
Know you and your screen
◆ With powerful system health examination and accurate record of the historical operation status of the LED display, we can know the weakness of the display in detail for prediction and precautions.

Multi-devices are supported

Multi-access and Multi-devices are supported
We support whatever devices you can imagine
◆ Multi-device: support Windows, Android, iOS
◆ Multi-browser: support mainstream browsers like IE, Chrome, Firefox, Opera, Safari, etc.
◆ Multi-system: support synchronous M3 and asynchronous Pluto control systems of Nova Tech.

Flexible authorization allocation and convenient transfer
You can authorize others to view the screen
◆ Status of the display can authorised to others, display can be transferred to others for management.

Detailed Health Report

For now and for the future
Know you and your screen
◆ With powerful system health examination and accurate record of the historical operation status of the LED display, we can know the weakness of the display in detail for prediction and precautions.
04 CASES

Pangu Plaza (3400㎡)
Xi’an Dayan Pagoda Qinhuantang Plaza (3000㎡)
Chengdu New Century Global Center (4080㎡)
Brazil Word Cup
Shenzhen Xinghe Century (1002㎡)
The Rio Olympic Games
Military Parade at Tian’anmen Square in 2015
2014 CICA Summit