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NovaStar
NEW
SOLUTIONS
2026

NOVASTAR



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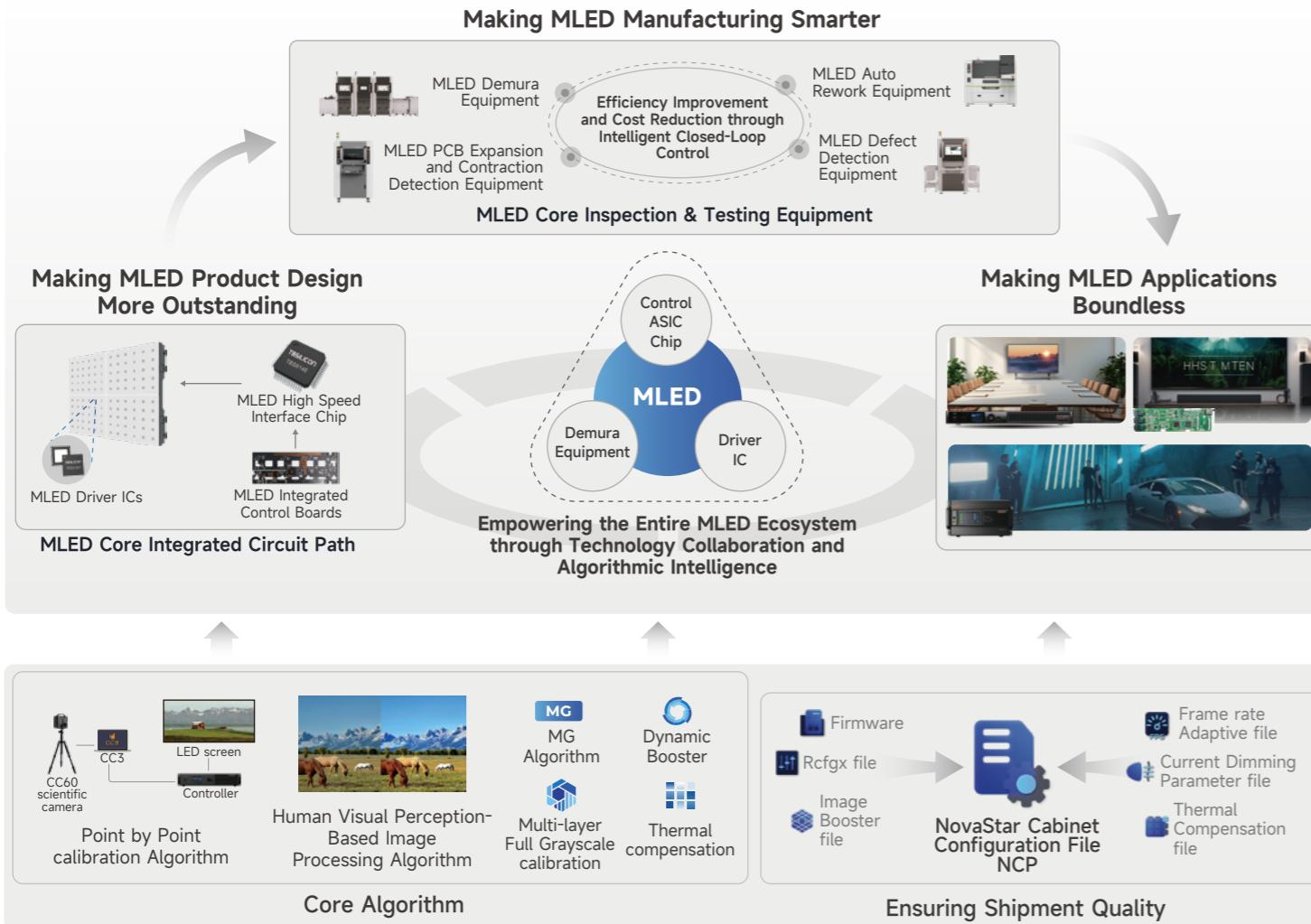
MLED **DISPLAY** **INDUSTRY** **SOLUTION**

Renew the vision

Expand the boundaries of LED display applications



MLED Industry Solution



MLED Calibration Solution

Precise Calibration, Ultra-simple Interaction

61 million pixels ultra-high resolution

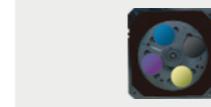
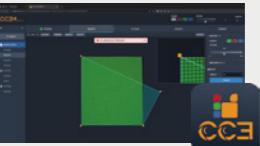
Uses CIE-XYZ filters tailored to human eye perception characteristics, ensuring more accurate pixel brightness and color collection for MLED

All-new CC3 calibration software of fully featured, providing more efficient and precise calibration

CC60
Scientific Calibration Camera



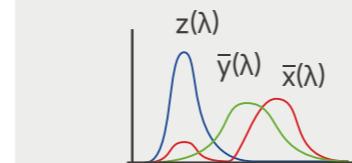
CC3
Calibration Software



CIE-XYZ

Filter

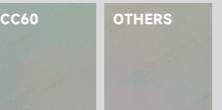
Brightness: $\pm 2\%$
Chroma: ± 0.002



Different Grayscales, Uniform and Consistent

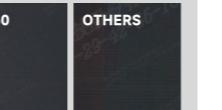
High grayscale calibration

CC60 calibration provides smoother transitions in high grayscales, whereas traditional calibration shows color blocks.



Low grayscale calibration

CC60 calibration offers finer and smoother transitions in low grayscales, surpassing the capabilities of traditional calibration.



Strong Versatility, Applicable



Cabinet Calibration



Full-screen Calibration

Rapid Calibration, Efficiency Leaps Forward

High-speed acquisition

Stable transmission

Higher resolution in a single acquisition

Faster calibration process

CC60
⌚ 0.25 Hours

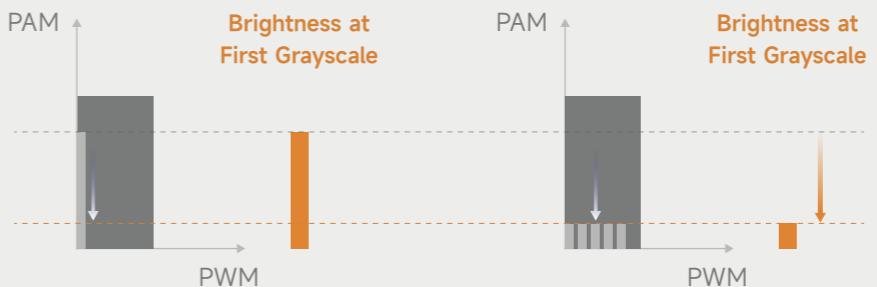


Digital Camrea
⌚ 4 Hours

MLED PWM+PAM Hybrid Driving Technology Solution



The driving current of the corresponding LED is further increased through PAM, based on the maximum PWM pulse width, to achieve a higher peak brightness.

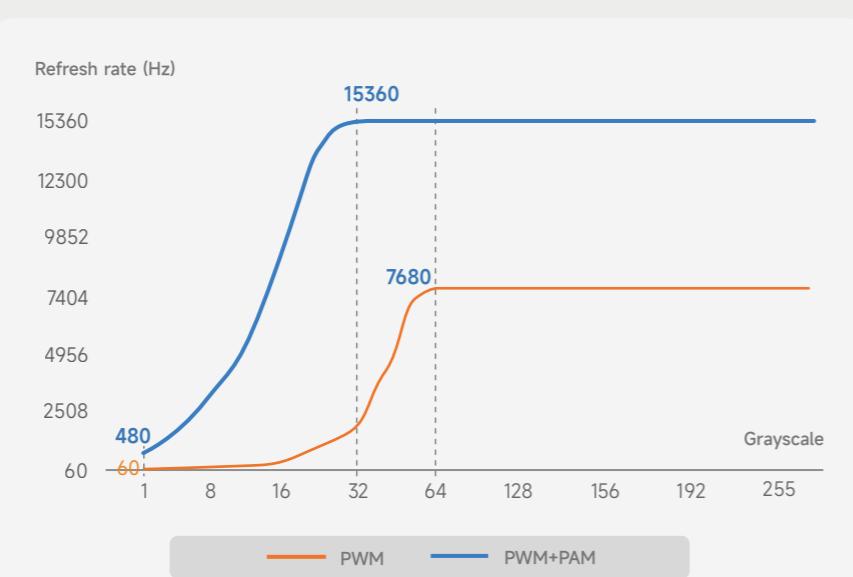


PAM is used to reduce the driving current of the corresponding LED on the basis of the minimum PWM driving pulse width so as to achieve lower brightness at first grayscale and higher brightness control accuracy. Meanwhile, PAM expands the driving pulse width of PWM, provides ample time for refresh rate of screen and completely eliminates flickering.



More Refresh Rate

PAM extends the driving pulse width of PWM, providing ample time for the screen refresh and completely eliminating flickering. Enhancing maximum and low-grayscale refresh rates effectively eliminates screen flicker and scan lines.



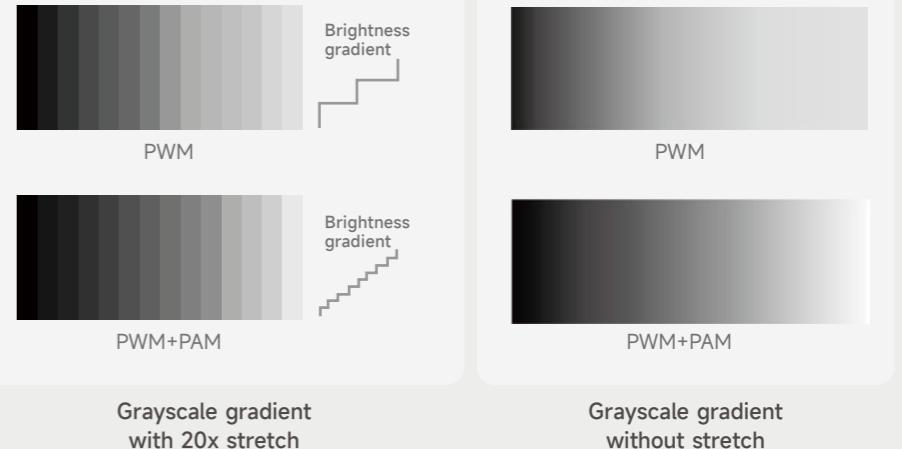
More Dynamic Range

PAM is used to reduce the driving current of the corresponding LED, based on the minimum PWM driving pulse width, clearly presenting every detail especially in the low-grayscale areas.



More Grayscale Level

More grayscale levels can be achieved through PWM+PAM driving method — refined grayscale with optimized merging and smoother gradient.

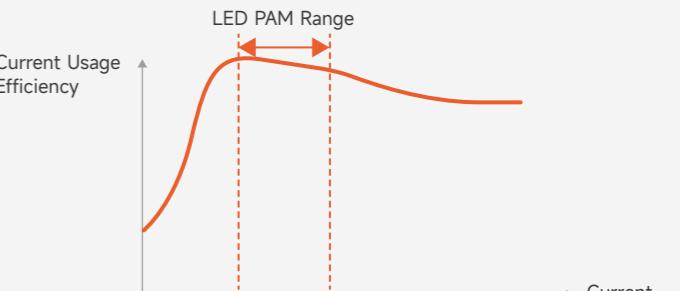


Less Power Consumption Less Temperature Rising

Deep Sleep Mode: When the display is in sleep mode, the driver IC's power consumption can be reduced from 60% to 15% of the total by the unique power saving design.

Dynamic Dark Mode: The driver IC can dynamically power down its display module per frame when driving a screen area in darkness, cutting power consumption to 30% of normal operation during such periods.

High-Efficiency Mode: By coordinating PWM and PAM, the operating current is maintained within the LED's peak luminous efficiency range, enhancing overall energy efficiency.



Test Scenario	Duration	Standard Mode	Eco Mode	Reduction
Sleep Mode/KWh	30 min	0.016	0.015	6.25%
Normal/KWh	1 hour	1.43	1.1	23%

Driver IC - Specifications

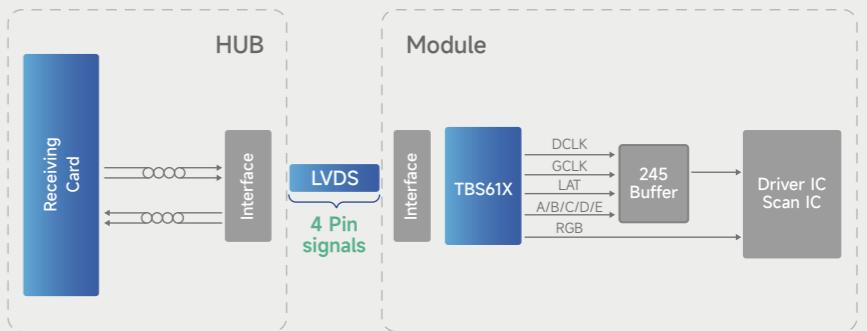
Driver Type	TBS A1664	TBS 5268	TBS 5266A	TBS 5267A	TBS 5367
Supported LED Types	Common-anode	Common-anode	Common-anode	Common-cathode	Common-cathode
No. of Output Channel	16	16	16	16	48
Supported Scans	1~64S	1~64S	1~64S	1~64S	20S×3
Power Supply Voltage Range	3.3~5.5V	3.3~5.5V	3.8~5V	2.8~5V	2.8/3.8~5V
Output Current per Channel	0.1~20mA	0.2~20mA	0.2~20mA	0.2~20mA	0.1~10mA
Grayscale Level (PWM+PAM)	20bit	16bit	16bit	16bit	24bit
Current Accuracy Between Channels	±1.25%	±1.5%	±1.5%	±1.5%	±2%
Current Accuracy Between ICs	±1.25%	±1.5%	±1.5%	±1.5%	±1.5%
Supported Maximum Refresh Rate	3840Hz/7680Hz/ 15360Hz/30720Hz	3840Hz/7680Hz/ 15360Hz	3840Hz/7680Hz/ 15360Hz	3840Hz/7680Hz/ 15360Hz	3840Hz/7680Hz/ 15360Hz
White Balance Resistor	Internal	Internal	External	External	External
Refresh Rate Enhancement	✓	✓	✓	✓	✓
S-PWM Technology	✓	✓	✓	✓	✓
LED Error Detection	✓	✓	✓	✓	✓
Chip-Level Dynamic Power Saving	✓	✓	✓	✓	✓
Standby Mode For Power Saving	✓	✓	✓	✓	✓
Pixel-Level Dynamic Power Saving	✓	✓	✓	✓	✓
LED Open Circuit Detection and Protection	✓	✓	✓	✓	✓
RoHS Compliant Package	SSOP24/QFN24	SSOP24/QFN24	SSOP24/QFN24	SSOP24/QFN24	QFN88

MLED High Speed Interface Solution

Empowering the LED display industry with a high-speed, low-emission serial interface and advanced module information management, accelerating the move toward standardization and intelligence.

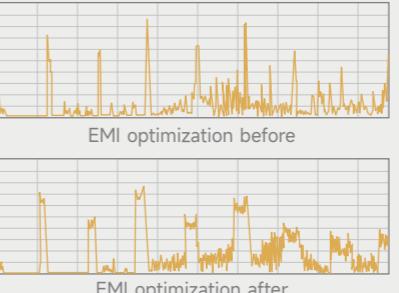
Minimal Transmission, Maximum Stability

With LVDS transmission and SerDes encoding, only two cable pairs are needed to light up the module, access its flash memory, and return status data — greatly simplifying wiring while ensuring high-speed, reliable communication.



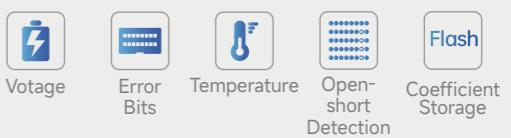
Strong Spread Spectrum, Ultra-Low Emission

Through the smart integration of spread-spectrum technology and LVDS transmission, EMI interference is dramatically reduced — with radiation levels lowered by up to 10 dBm, enabling effortless Class B certification.



Intelligent Monitoring, Comprehensive Awareness

The module features an intelligent monitoring system that can track transmission error bits, temperature, and voltage in real time. Combined with driver chips supporting open-circuit detection, it provides full-spectrum monitoring of the module's LED status, enhancing overall intelligence and delivering a reliable user experience.



MLED Integrated Control Board – Three-in-One Solution

Paired with a mature power platform, this board supports both common-cathode and common-anode designs while offering multiple interface options. It empowers standardized and large-scale MLED production.



Capacity 512×512	Supports 32 Parallel Data
Power Supply 130W	Build in PFC Design
3.8V/4.0/4.2 Voltage Adjustable	

Multiple Versatile Interfaces

Meets Diverse Product Application Needs, Supports 8×60Pin, 8×40Pin, 4×60Pin, 4×40Pin, and LVDS interfaces, providing greater flexibility and options.

Support 60Pin
Support 40Pin
Support LVDS

Exceptional Visual Performance

Supports a picture-quality engine and full-grayscale multi-layer calibration algorithms, rendering every detail with precision and delivering perfectly uniform visuals.



Smart and Secure Protection

Provides smart safety assurance tailored to different application scenarios. While ensuring stable display performance, it delivers intelligent energy saving, soft-start power control, and visualized remote monitoring for clear, real-time fault detection.



MLED Integrated Control Board - Specifications

MLED

MLED Intelligent Manufacturing Solutions

After the MLED display module is processed at the factory through the NovaStar intelligent equipment group, it solved the mass production difficulties such as "MLED display Uniformity", "MLED PCB Expansion and Contraction", and "massive transfer quality detection and repair" after processing by NovaStar intelligent equipment group at the factory, helping industry partners achieve standardization and large-scale manufacturing of MLED displays, and promoting the explosion of industrial value.

MLED PCB Expansion and Contraction Detection Equipment

With μ -Level optical system, dual mode PCB board High precision Detection in Pixel Level. Professional self-development Algorithm precisely matching suitable stencil

95 %
↑
PCB Printing Yield 75 %
↓
PCB Washing Quantity

- μ -level machine vision automatic positioning system
- Accurately target the pads to improve stencil matching precision
- Enhance PCB solder paste printing yield
- Reduce SPI board washing rates and scrap boards
- Improve die bonding quality



MLED Auto Rework Equipment

Accurate repair of module dead pixel to improve the overall yield of finished products.

90 %
↑
Pass Yield Rate 99 %
↑
LED First rework Yield rate



- Reliable dual direction chip removal
- Precise solder paste control based on advanced visual algorithm
- High compatibility scientific laser heating system
- Full automatic closed loop rework& detection



MLED Demura Equipment

Improve module uniformity, spare parts of screen are ready to use, no need for second full-screen calibration.

84 %
↓
Reduction in Personnel Usage

70 %
↓
Inventory Quantity

90 %
↓
Reduction in Space Usage

Manual Calibration Automatic Calibration

Daily Production Capacity: 2400 pcs or 60m² Daily Production Capacity: 2400 pcs or 60m²

Space	50m ²	5m ²
Light Source	Controllable Low Light Source	No Requirements for Light Source
Personnel	3 People/Shift × 2 Shifts	0.5 People/Shift × 2 Shifts
Turnover	Requires Temporary Storage	No Temporary Storage Needed
Inventory	Not Universal by Order	Standard Products



MLED Defect Detection Equipment

High efficiency detection of module failure to improve module delivery yield.



- Experienced display control solution
- 360° high precision capturing
- Comprehensive pixel level Brightness& Chroma analysis

20 +
Detection cases
99.5 %
↑
Detection rate



MLED

Application Scenarios



INFINITY

**MLED Ultra-High
Image Quality Solution
Based on PWM+PAM Hybrid
Driving Technology**

Five More

- More Grayscale Level | More Dynamic Range
- More Refresh Rate | More Color Accuracy
- More Peak Brightness

Two Less

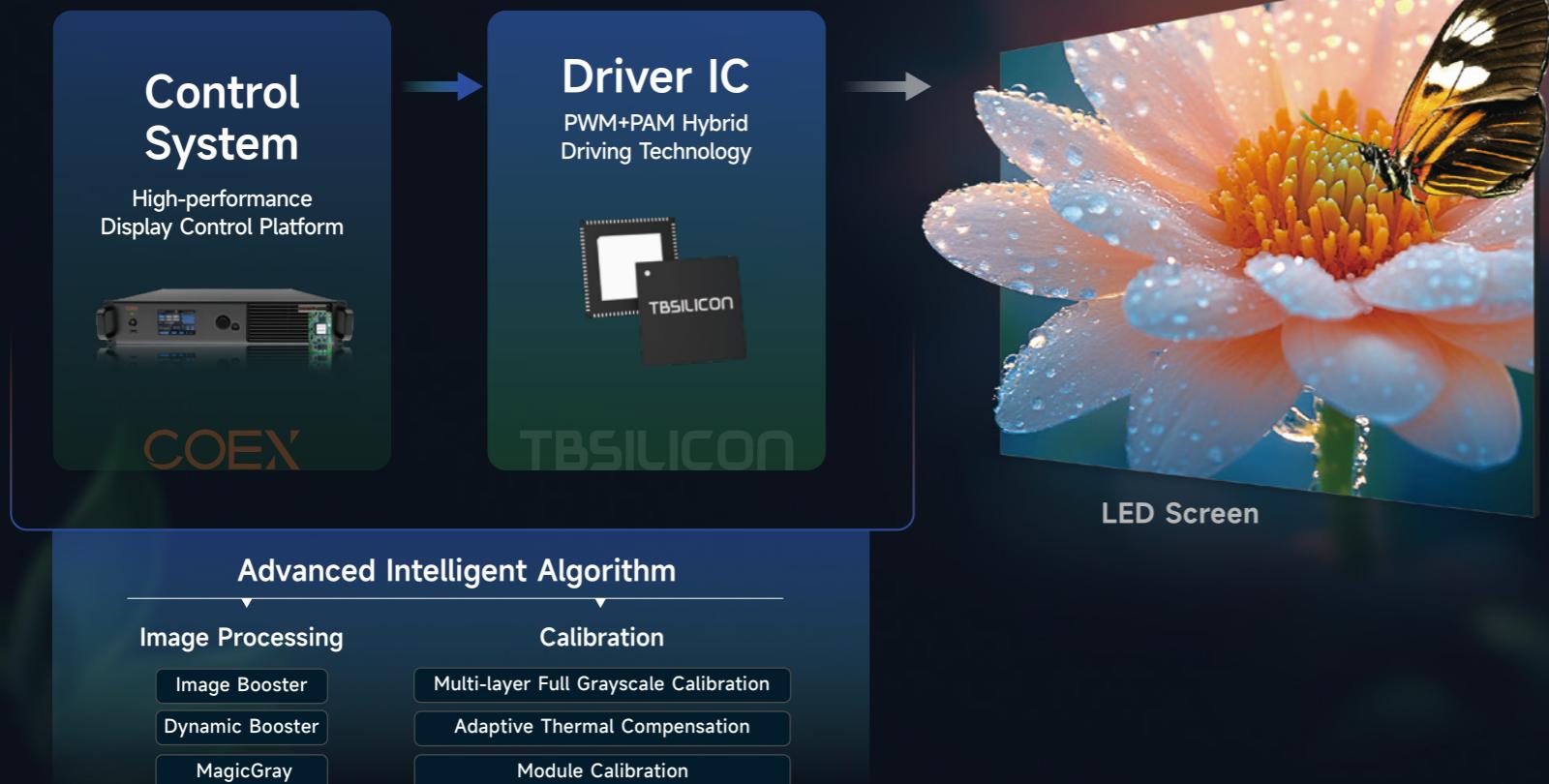
- Less Power Consumption
- Less Temperature Rising



Infinity INFINITY

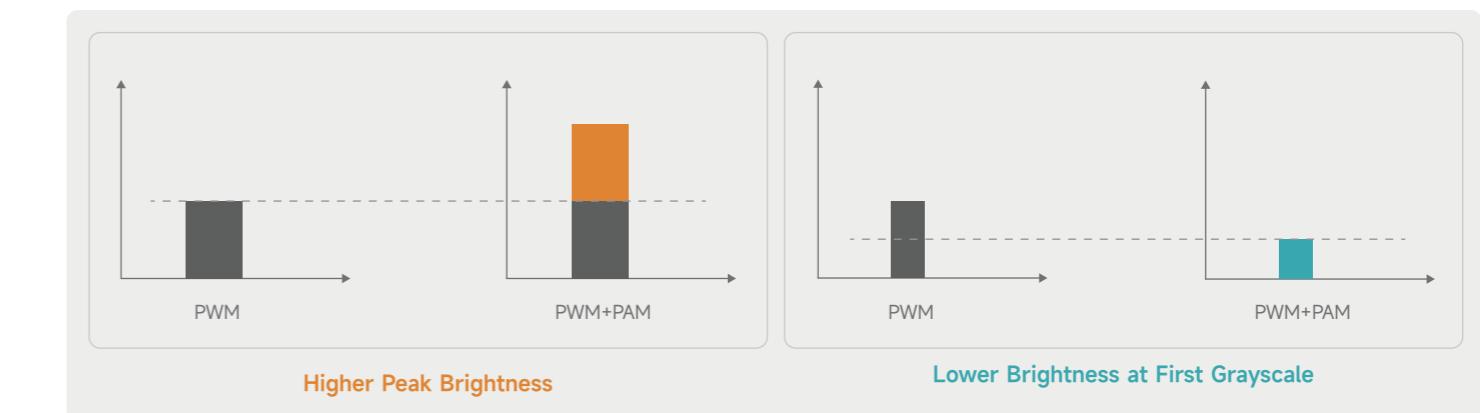
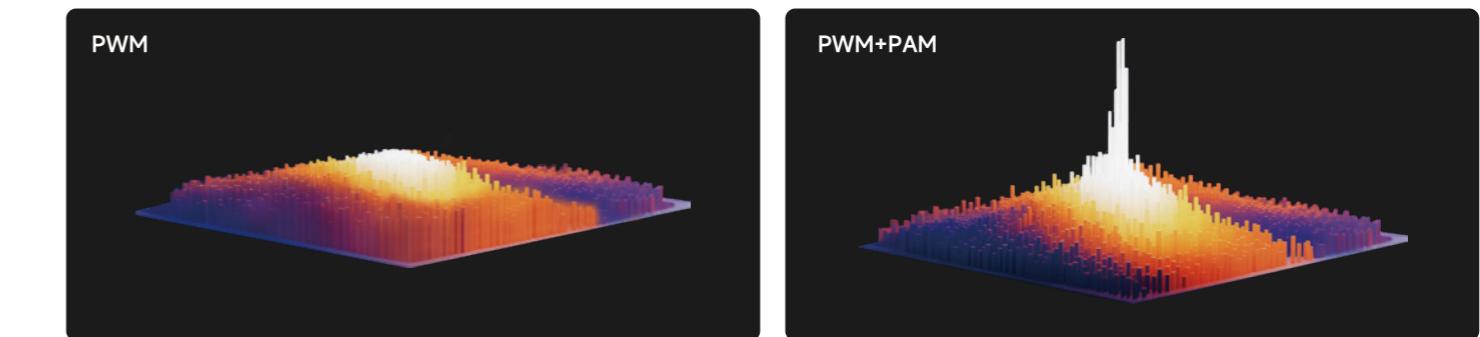
Pursuing the Ultimate Visual Beauty

An extraordinary display effect is achieved through a full-chain breakthrough, enabled by deeply integrating control systems, intelligent algorithms, full gray-scale calibration, and PWM+PAM hybrid driver IC.



PWM+PAM Hybrid Driving Technology

Through hybrid PWM+PAM driving technology, independent pixel control is achieved, breaking the limitations of traditional PWM technology to deliver higher peak brightness and lower brightness at first grayscale, reaching an ultra-high dynamic range.



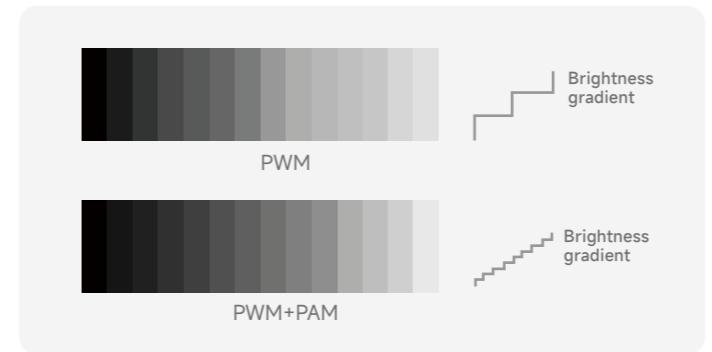
More Peak Brightness

The driving current of the corresponding LED is further increased through PAM, based on the maximum PWM driving pulse width. This achieves higher peak brightness, making the picture even more eye-catching and dazzling.



More Grayscale Level

More grayscale levels can be achieved through PWM+PAM driving method — refined grayscale with optimized merging and smoother gradient.



Grayscale gradient with 20x stretch



Grayscale gradient without stretch

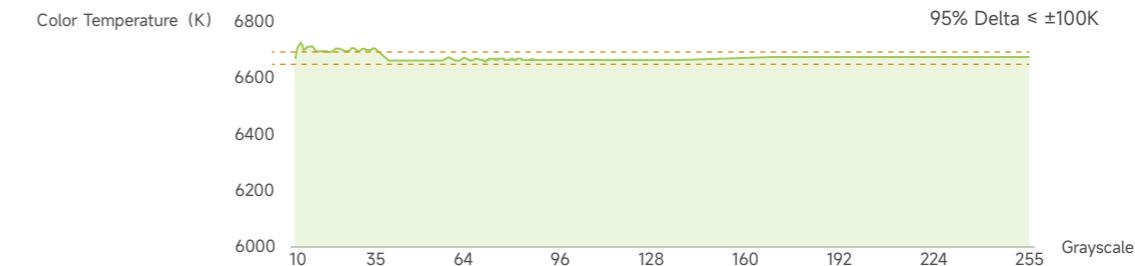
More Dynamic Range

PAM is used to reduce the driving current of the corresponding LED, based on the minimum PWM driving pulse width, clearly presenting every detail especially in the low-grayscale areas.



More Color Accuracy

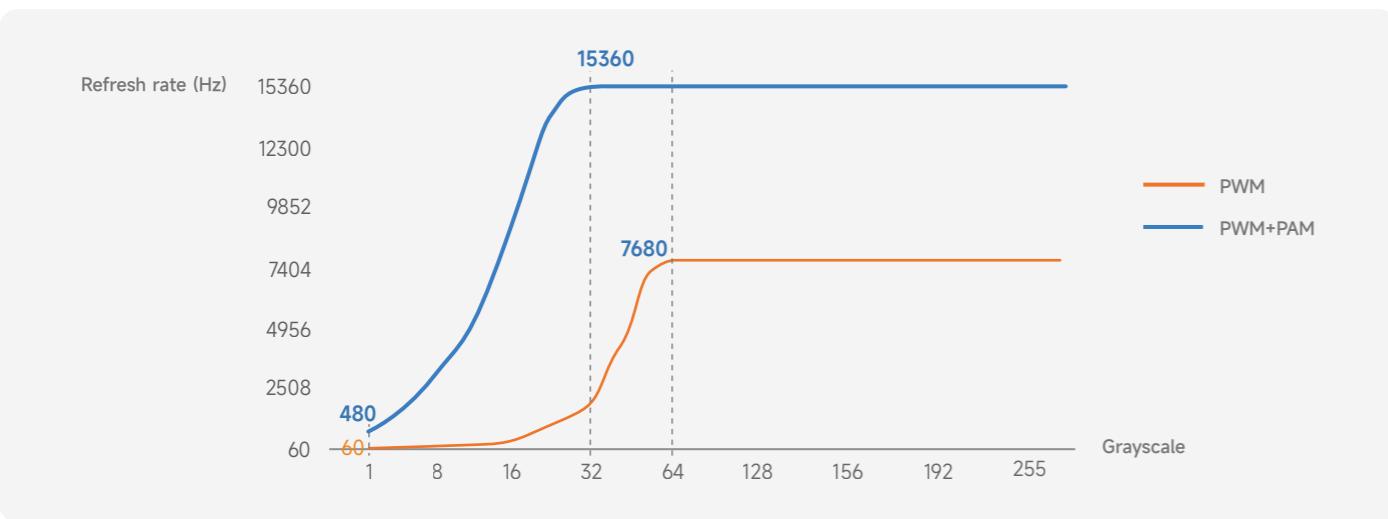
Find the optimal PWM + PAM combination, compensate for the wavelength drift caused by current changes through brightness and chroma calibration technology, and conduct color management, ensuring the screen achieves higher color temperature consistency and high color accuracy performance throughout the entire grayscale range.





More Refresh Rate

PAM extends the driving pulse width of PWM, providing ample time for the screen refresh and completely eliminating flickering. Enhancing maximum and low-grayscale refresh rates effectively eliminates screen flicker and scan lines.

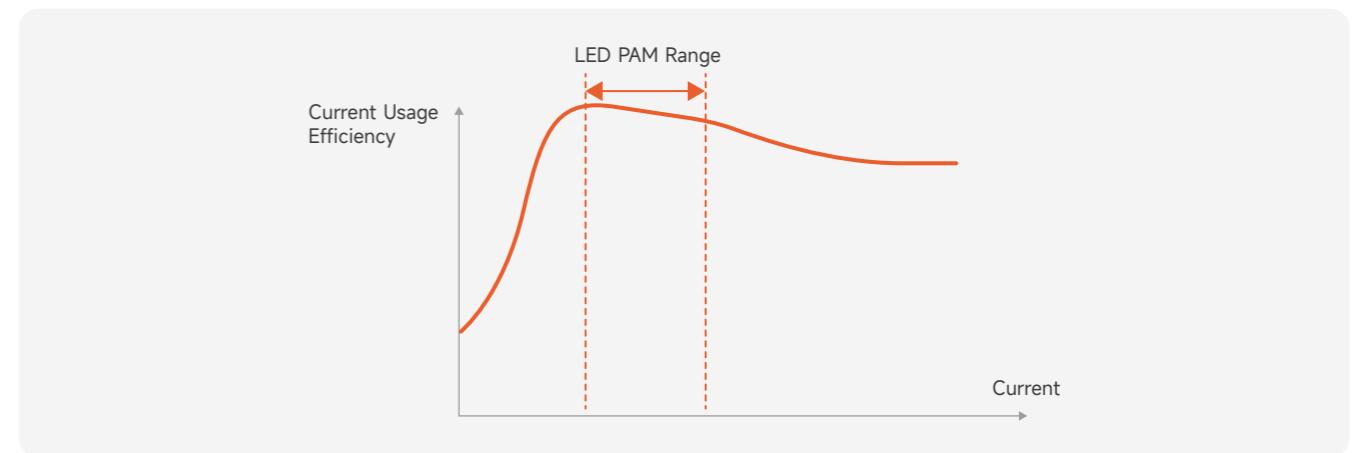


Less Power Consumption Less Temperature Rising

Deep Sleep Mode: When the display is in sleep mode, the driver IC's power consumption can be reduced from 60% to 15% of the total by the unique power saving design.

Dynamic Dark Mode: The driver IC can dynamically power down its display module per frame when driving a screen area in darkness, cutting power consumption to 30% of normal operation during such periods.

High-Efficiency Mode: By coordinating PWM and PAM, the operating current is maintained within the LED's peak luminous efficiency range, enhancing overall energy efficiency.



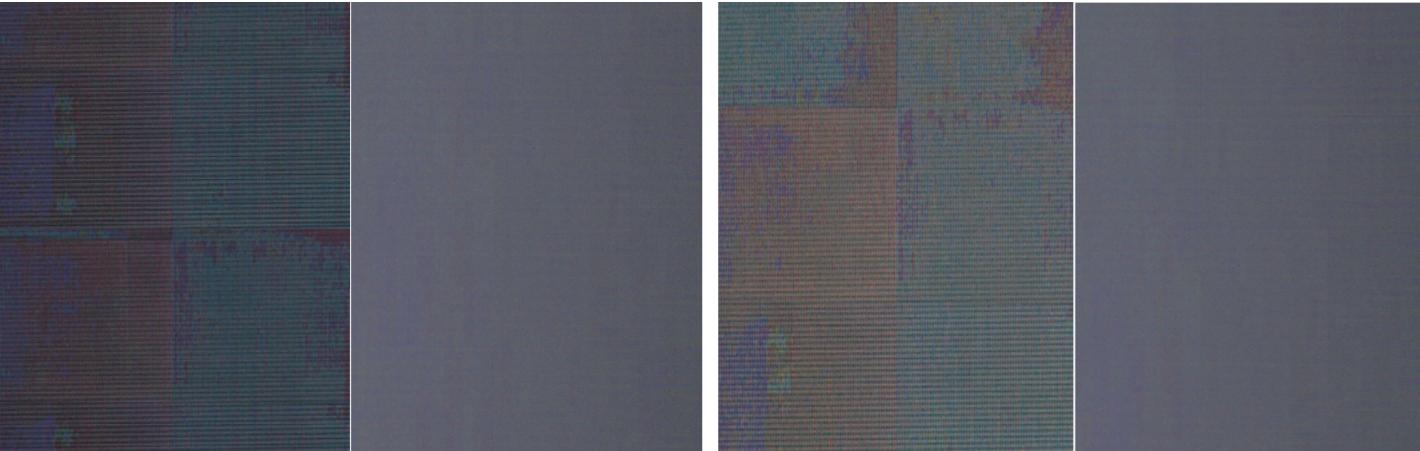
Test Scenario	Duration	Standard Mode	Eco Mode	Reduction
Sleep Mode/KWh	30 min	0.016	0.015	6.25%
Normal/KWh	1 hour	1.43	1.1	23%

Multiple Uniformity Compensation Algorithms



Multi-Layer Full Grayscale Calibration

By generating the exclusive calibration coefficients for every grayscale, multi-layer full grayscale calibration keeps Mini LED and Micro LED screens always uniform especially in the low grayscale.



Brightness and Chroma Calibration at Grayscale 5

Full Grayscale Calibration at Grayscale 5

Brightness and Chroma Calibration at Grayscale 8

Full Grayscale Calibration at Grayscale 8



Adaptive Thermal Compensation

Ensures monitor-level stable color temperature and color accuracy for LED displays.

One-click enabling

Analyzing video sources frame by frame, and automatic adjustment of compensation coefficients for each cabinet.

Unaffected by ambient temperature changes

Real-time compensation based on screen temperature and usage.

Algorithms Off



Algorithms On



Color temperature shift: <100K

Color coordinate shift: <0.01

Brightness Loss < 5%

Image Quality Enhancement Algorithms

Image Booster



Fine grayscale

22bit+, 64 times grayscale improvement, 0.002nits precise control, ultra-precise image for stunning realism.



More realistic color

Fully automated color standardization, calibration and verification, self-adapts to color gamut, $\Delta E < 2$.

Dynamic Booster

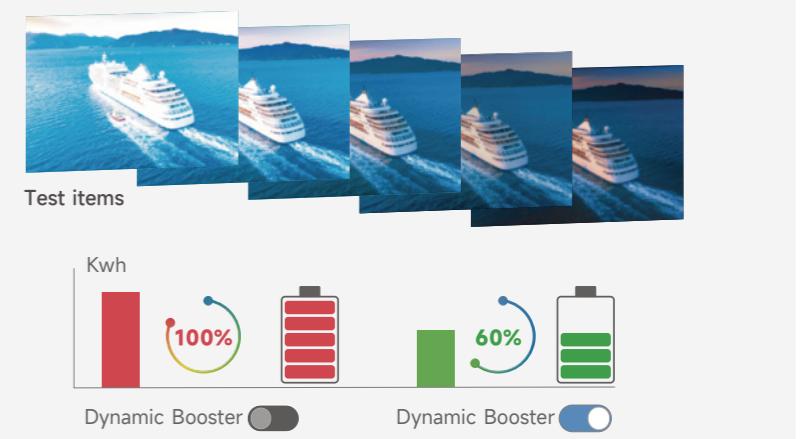
Higher Contrast Ratio

By enhancing bright and dark content details to the ideal level, an SDR source can deliver HDR-like effect, ensuring no overexposure in bright areas and no loss of detail in shadows.



Power Saving With Dynamic Algorithm

With real-time analysis, brightness is adjusted dynamically frame by frame, saving 20%-40% power and extending the lifespan of an LED display.



COEX SERIES

NOVASTAR FLAGSHIP CONTROL SYSTEM

NovaStar has been consistently devoted to delivering the superior visual experience and innovation for users.

Here comes the COEX Series solution. The design concepts are as follow.

- C for Creative & Connective
- O for Open
- E for Extensible
- X for Infinite possibilities



Specifications

8K Modular Design LED Processors



Product Model	MX6000 Pro	MX2000 Pro
Rack Unit	6U	2U
Max. Input /Output Cards	8	2
Max. Loading Capacity	141 Million	35.38 Million
Input Card Options		MX_1×DP 1.4 (8K@60Hz) input card / MX_1×ST 2110 (100G) input card / MX_4×HDMI 2.0 input card / MX_4×DP 1.2 input card / MX_4×12G-SDI input card / MX_2×HDMI 2.1 input card / MX_2×DP 1.4 input card / MX_1×DP 1.4+HDMI 2.1 input card / MX_1×ST 2110 (25G) input card / MX_2×ST 2110 (25G) input card
Output Card Options	1G	MX_4×10G SFP+ output card (Work with Armor series card)
	5G	MX_1×40G QSFP+ output card (Work with XA50 Pro)
Control Interface		1G Ethernet
Control Protocol		TCP/IP, SNMP, Art-Net
Layers	Up to 32×4K layers	Up to 8×4K layers
	Note: 4×4K layers per output card	
Genlock		Tri-level, Bi-level / Blackburst
Input Bit Depth		8bit / 10bit / 12bit
Image Booster		✓ (*Exclusively supported by A8s, A8s-N, A10s Pro and XA50 Pro)
Adaptive Thermal Compensation		✓ (*Exclusively supported by A10s Pro and XA50 Pro)
Multi-layer Full Grayscale Calibration		✓ (*Exclusively supported by A10s Pro and XA50 Pro)
Color Management		Color Replacement, 14CH Color Correction, Color Curve, 3D LUT
No Rectangle Limitation		✓ (*Exclusively supported by A5s Plus, A7s Plus, A8s-N, A10s Pro and XA50 Pro)
HDR		HDR10 / HLG
Brightness Overdrive		✓ (*Exclusively supported by A10s Pro and XA50 Pro)
Low Latency(<1ms)		✓
Adaptive Frame Rate		23.98 / 24 / 25 / 29.97 / 30 / 47.95 / 48 / 50 / 59.94 / 60 / 72 / 75 / 100 / 119.88 / 120 / 143.86 / 144 / 240Hz (*Exclusively supported by the custom firmwares of A10s Pro, XA50 Pro and IC.)
Multi Mode		✓
3D		✓

Specifications

MX Series LED Processors



MX40 Pro



MX30



MX20



KU20



Product Model	MX40 Pro	MX30	MX20	KU20
Loading Capacity	9 Million	6.5 Million	3.9 Million	3.9 Million
Inputs	3×HDMI 2.0, 1×DP 1.2 1×12G-SDI	1×HDMI 2.0, 1×HDMI 1.4 1×DP 1.1, 2×3G-SDI	2×HDMI 1.3, 1×3G-SDI	1×HDMI 1.3
Outputs	20×EtherCON, 4×10G OPT 3×HDMI 2.0 LOOP 1×12G-SDI LOOP, 1×SPDIF	10×EtherCON, 2×10G OPT 1×HDMI 2.0 LOOP 1×HDMI 1.4 LOOP 2×3G-SDI LOOP, 1×SPDIF	6×EtherCON, 2×10G OPT 2×HDMI 1.3 LOOP, 1×3G-SDI LOOP, 1×SPDIF	6×EtherCON, 1×10G OPT 1×HDMI 1.3 LOOP, 1×SPDIF
Control Interface	1G Ethernet			
Control Protocol	TCP/IP, Art-Net, SNMP			
Working Modes	Sending-Only mode; All-In-One Controller			
Layers	4	3	3	1
Genlock	√	√	√	/
Input Bit Depth	8bit / 10bit / 12bit	8bit / 10bit	8bit / 10bit	8bit / 10bit (Optional)
Image Booster	√ (*Exclusively supported by A8s, A8s-N, A10s Pro)			
Dynamic Booster	√ (*Exclusively supported by A10s Pro)	/	/	/
Adaptive Thermal Compensation	√ (*Exclusively supported by A10s Pro)			
Multi-layer Full Grayscale Calibration	√ (*Exclusively supported by A10s Pro)			
HDR	HDR10 / HLG	HDR10 / HLG	/	/
Adaptive Frame Rate	23.98/24/25/29.97/30/47.95/48/50/59.94/60/72/75/85/100/119.88/120/143.86/144/240Hz	23.98/24/25/29.97/30/47.95/48/50/59.94/60/72/75/85/100/119.88/120/143.86/144/240Hz	23.98/24/25/29.97/30/47.95/48/50/59.94/60/72/75/85/100/119.88/120/143.86/144Hz	23.98/24/25/29.97/30/47.95/48/50/59.94/60/71.93/72/75/100/119.88/120Hz
(*Exclusively supported by the custom firmware of A10s Pro and IC.)				
3D	√	/	/	/
More Features	No Rectangle Limitation, Low Latency (<1ms) , Multi Mode			

Specifications

5G Solution LED Processors



Product Model	MX6000 Pro	MX2000 Pro	CX40 Pro
Rack Unit	6U	2U	2U
Max. Input /Output Cards	8	2	/
Max. Loading Capacity	141 Million	35.38 Million	9 Million
Input Options	MX_1xDP 1.4 (8K@60Hz) input card / MX_1xST 2110 (100G) input card MX_4xHDMI 2.0 input card / MX_4xDP 1.2 input card / MX_4x12G-SDI input card MX_2xHDMI 2.1 input card / MX_2xDP 1.4 input card / MX_1xDP 1.4+HDMI 2.1 input card MX_1xST 2110 (25G) input card / MX_2xST 2110 (25G) input card	MX_1x40G QSFP+ output card	2xHDMI 2.0 1xDP 1.2 2x12G-SDI
5G Output Options		6x5Gbps Neutrik 1x40Gbps QSFP+ 2xHDMI 2.0 LOOP 2x12G-SDI LOOP	
Control Interface		1G Ethernet	
Control Protocol		TCP/IP, SNMP, Art-Net	
Layers	Up to 32x4K layers	Up to 8x4K layers	Up to 3x4K layers
Genlock		Tri-level, Bi-level / Blackburst	
Input Bit Depth		8bit / 10bit / 12bit	
Image Booster		√	
Dynamic Booster	×	×	√
Adaptive Thermal Compensation		√	
Multi-layer Full Grayscale Calibration		√	
Color Management		Color Replacement, 14CH Color Correction, Color Curve, 3D LUT	
No Rectangle Limitation		√	
HDR		HDR10 / HLG	
Brightness Overdrive		√	
Low Latency(<1ms)		√	
Adaptive Frame Rate	23.98 / 24 / 25 / 29.97 / 30 / 47.95 / 48 / 50 / 59.94 / 60 / 72 / 75 / 100 / 119.88 / 120 / 143.86 / 144 / 240Hz (*Exclusively supported by the custom firmwares of IC.)		
Multi Mode		√	
3D		√	

COEX Series

Receiving Cards

Product Model	A10s Pro	XA50 Pro
Bandwidth	1G	5G
Connector	High-density Connector	DDR3
Loading Capacity	512×512	512×1024
Image Booster	√	√
Dynamic Booster		√
Adaptive Thermal Compensation		√
Multi-layer Full Grayscale Calibration		√
HDR (HDR10 / HLG)		√
Adaptive Frame Rate		√
Mapping		√
Monitoring (Temperature/Voltage/Bit Error Detection)		√
RGB Parallel Data Group	32	40
Serial Data Groups	64 / 128	



VMP

Vision Management Platform





Intelligent Monitoring

Detect risks before happen

Users can monitor the status of whole link devices from the video source to LED displays, and know the health status through the visualized interface and running logs.

The potential risks can be detected accurately and VMP can also provide suggestions for alarms how to correct them so that users could take measures accordingly and make sure the events and projects are conducted smoothly.



Input Source Preview & Content Monitoring

Real-time control of display status

No need for additional LCD monitors. Users can get the input source and content on screen in the VMP software in real time.



7-Color Multi-batch Correction & Visualized Seam Correction

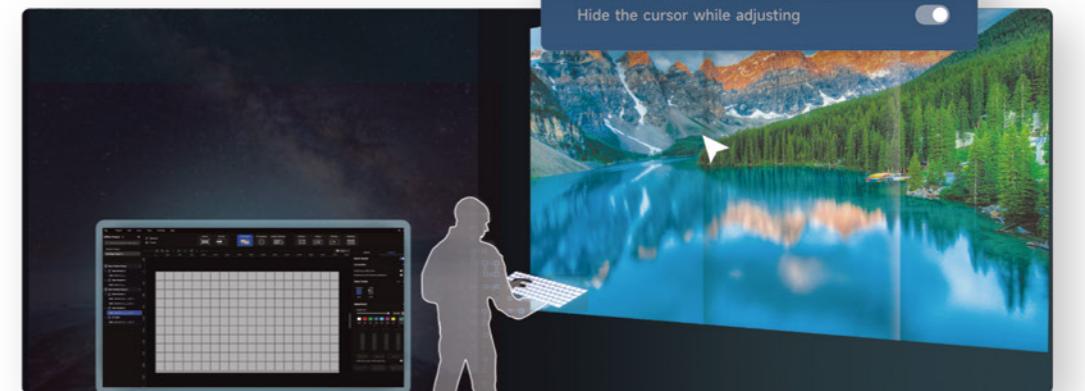
Multi-batch correction and seam correction can be completed rapidly with an interactive and visualized design.

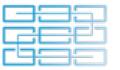
Multi-batch adjustment coefficients can be copied and applied to other cabinets of the same batch, or saved as a file, allowing users to transfer settings to other cabinets, significantly enhancing work efficiency.

With the introduction of cyan, magenta, and yellow adjustments, multi-batch correction has been upgraded from a 4-color to a 7-color system to achieve greater precision.

The system allows for single-color reset or reversion to the last settings, streamlining the adjustment process, and reducing on-site configuration and maintenance time.

For seam correction, users can visually locate and select the seams simply by using the mouse, and then adjust the seams on the screen directly, greatly improving efficiency.





Quick & Easy Screen Mapping

Screen mapping can be done easily on the software canvas with a mouse. Auto detection of connected cabinets and output of screen mapping file in advance serve to greatly increase operational efficiency.

Shortcuts are supported, allowing users copy and paste the cabinets easily. Rapidly reusing Cabinet Topology in large-scale projects and eliminating the repetitive configurations across multi-screens.

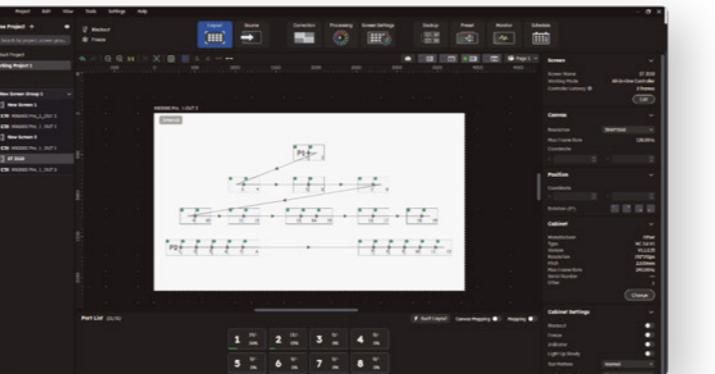
Coordinates ruler helps users to view cabinet positions and layout relationships more intuitively.

Reconnecting the cabinets without deleting them.



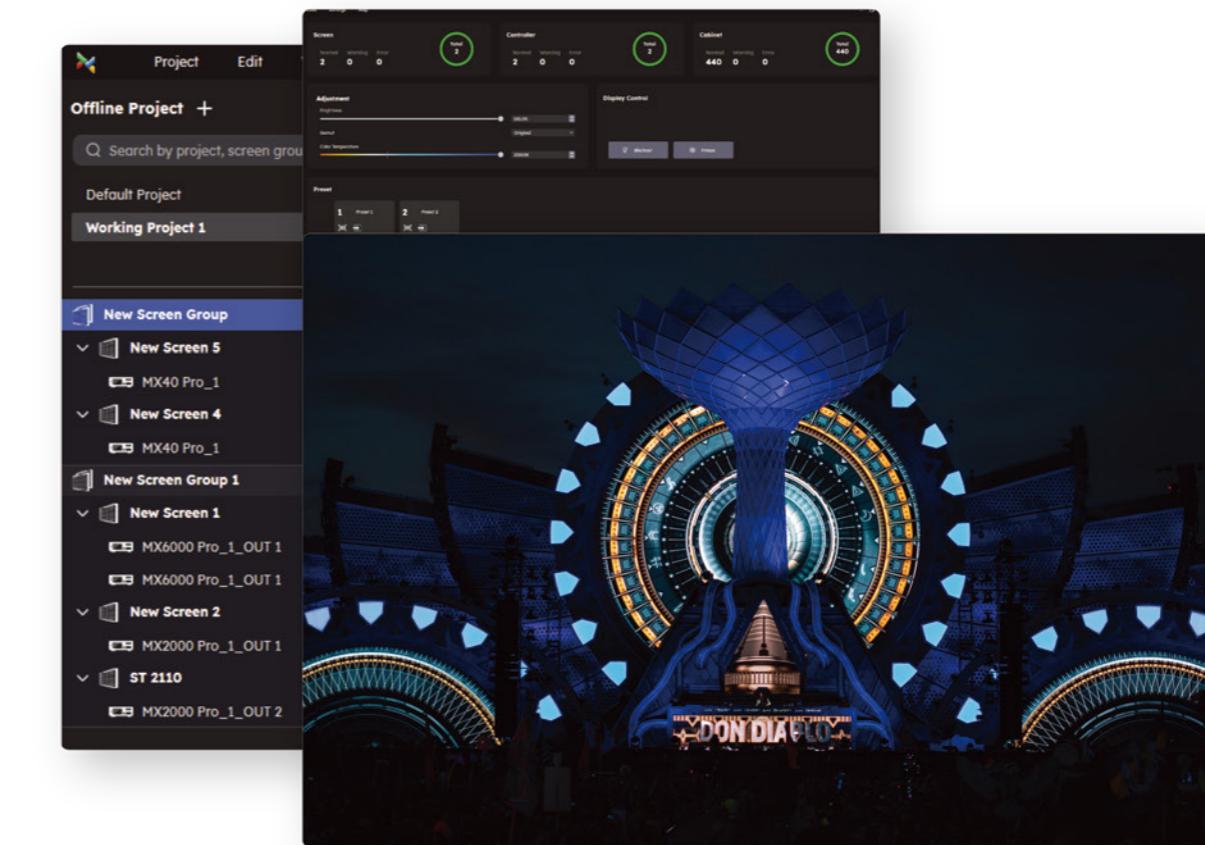
Free From Rectangular Calculation Maximizing The Capacity

Loading capacity is calculated by the physical cabinet pixels, free from rectangular limitation, helping maximize the loading capacity of controllers. No more capacity waste from leaving blank or irregular shape designs. Create without limits!



Efficient Group Management

All devices are grouped by screens, making multiple screen management and preset switch easier and more efficient than before. Check the working status of screens, controllers and cabinets in real-time.





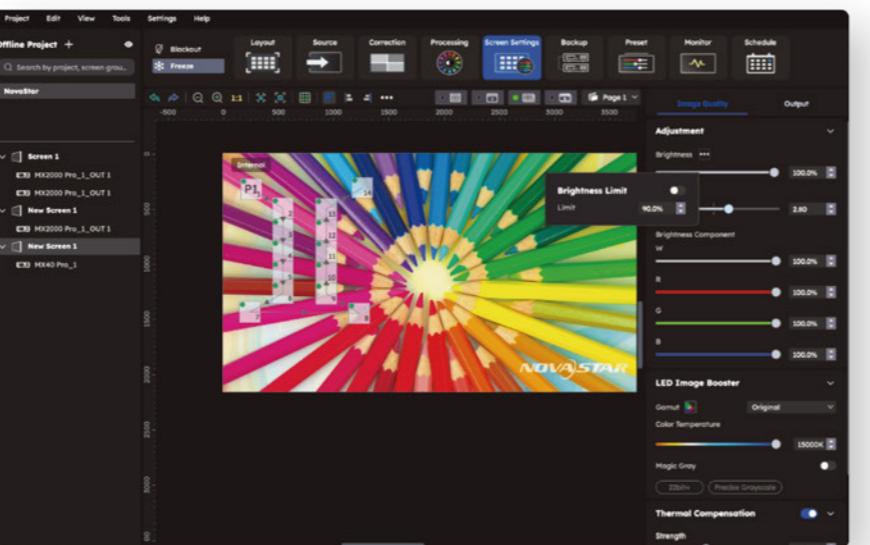
Brightness Management

RGBW Brightness Component

Individual adjustment of RGBW for different color temperature in various applications.

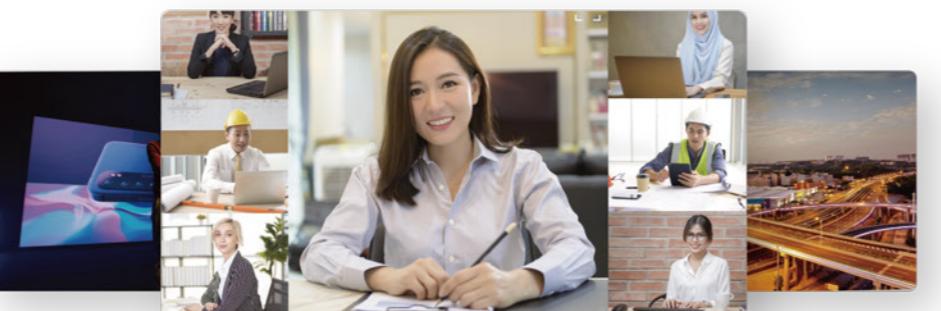
Brightness Limit

Addressing screen brightness limitation requirements for overcurrent protection scenarios.



Scenario Presets

Users can save all parameters of inputs and outputs into presets which provide users with quick and easy retrieval through a single click.



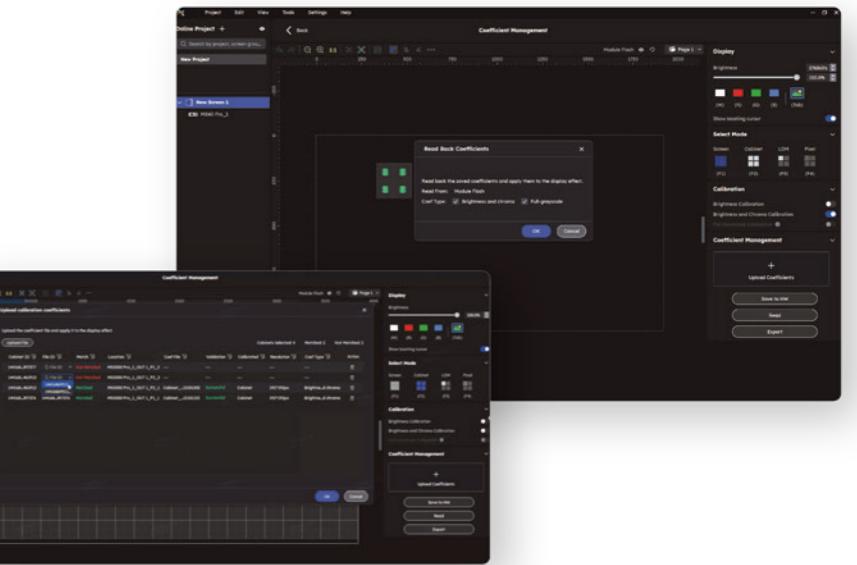
PRESET 1 PRESET 2 PRESET 3



Calibration Coefficient Management

Users are not allowed to modify the coefficients in module flash, preventing unauthorized modifications and featuring a default readback from the module flash for enhanced security.

Calibration coefficients can be uploaded in batch, and match the cabinets automatically by the ID info. No need to match manually.



Other Features



Controller Firmware Painter

Sync the controller firmware by one click.



Art-Net

Set the start address of connected device.



Color Space

Support 4:2:0 color sampling format for HDMI2.0/HDMI2.1/DP1.4.



Peripheral Device

Complete the maintenance for 3D emitter and multi-function card.



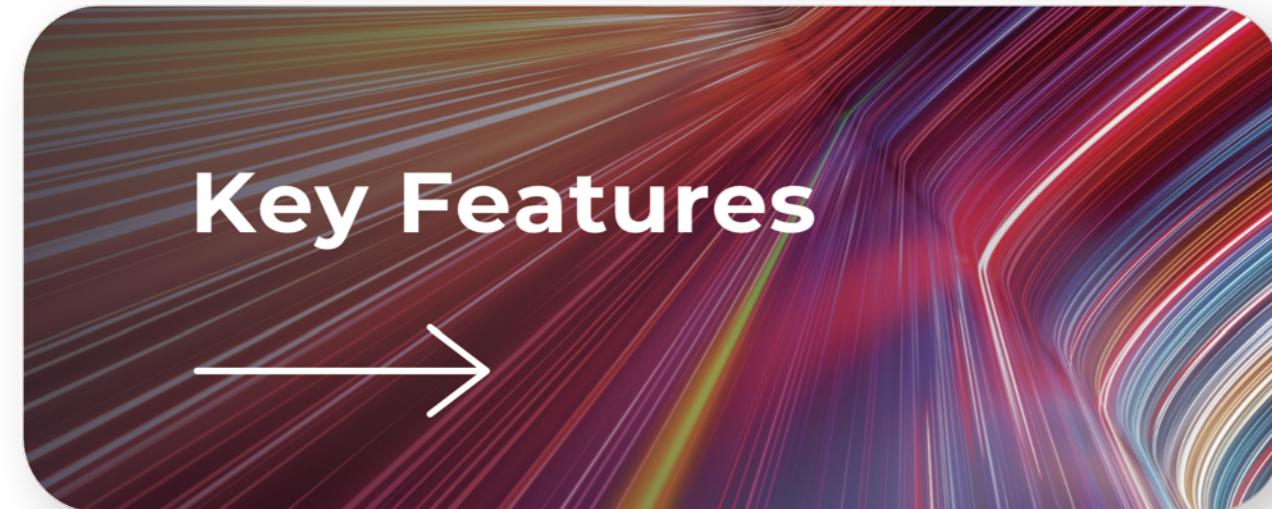
ST 2110 Settings

Set the OPT IP address, FEC settings, NMOS settings.



SPDIF Audio Output

Meet digital audio output requirements in specific scenarios.



NCP All-in-one Package

All parameters set in LED manufacturers to get the best performance

NCP is a file package designed to enhance display performance and simplify maintenance for users.

It can include firmware, configuration file, image booster file, thermal compensation file, dynamic booster file, adaptive frame rate file, and multi-mode file.

Users can specify detailed requirements to LED suppliers, eliminating concerns about file management.

Note: Some functions depend on the driver IC and control system hardware.

NCP File



Receiving card firmware



Config file



Image booster file



Adaptive thermal compensation file



Multi-mode file



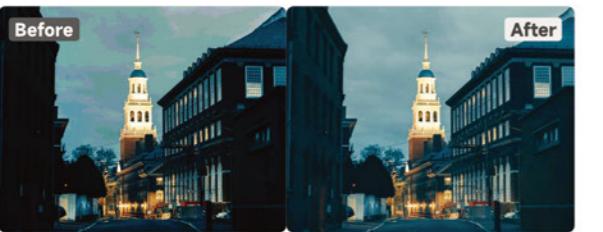
Adaptive FR file



Image Booster

Fine Grayscale

22bit+, 64 times grayscale improvement, 0.002-nit precise control, ultra-precise image for stunning realism.



More Realistic Color

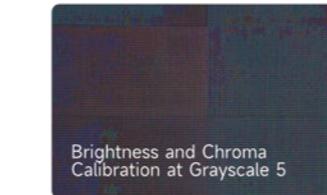
Fully automated color standardization, calibration and verification, self-adapts to color gamut.



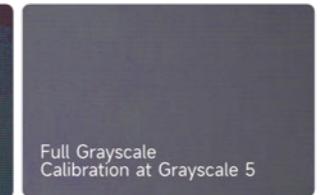
Multi-layer Full Grayscale Calibration

Deliver stunning image quality with uniform grayscale

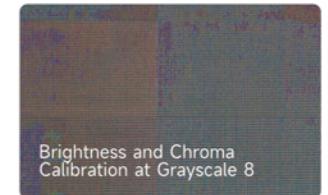
By generating the exclusive calibration coefficients for every grayscale, multi-layer full grayscale calibration keeps Mini LED and Micro LED screens always uniform especially in the low grayscale.



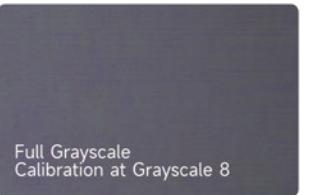
Brightness and Chroma Calibration at Grayscale 5



Full Grayscale Calibration at Grayscale 5



Brightness and Chroma Calibration at Grayscale 8



Full Grayscale Calibration at Grayscale 8

Dynamic Booster

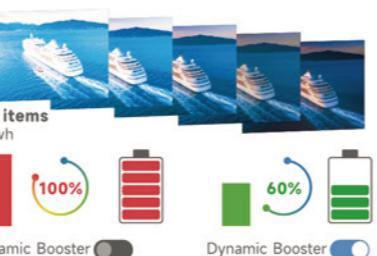
Fine Grayscale

22bit+, 64 times grayscale improvement, 0.002-nit precise control, ultra-precise image for stunning realism.



Power Saving With Dynamic Algorithm

With real-time analysis, brightness is adjusted dynamically frame by frame, saving 20%-40% power and extending the lifespan of an LED display.



Adaptive Thermal Compensation

No color shifting of your LED display

Using AI inference algorithms to establish a mapping relationship between image content and thermal effects of the screen, real-time thermal analysis technology achieves precise thermal compensation, effectively resolving color shift issues caused by uneven heat dissipation. Regardless of continuous operation or temperature changes, the color temperature and brightness of the screen remain consistently stable.



Uneven heat dissipation



Adaptive Thermal Compensation

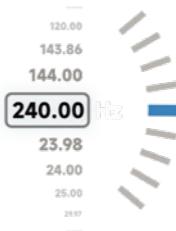
Professional Color Management

Creative Unleashed



No need extra setting when frame rate changes

The system can adapt to video inputs' frame rate automatically. Users can easily switch among different frame rates with no more settings. Users can customize frame rates from 23.94Hz to 240Hz, of which the stepping value is accurate to 0.01Hz.



*Note: Available for specific driver ICs.

Shutter Fit

Capture every frame perfectly

Utilizing technologies such as Genlock, phase offset and shutter fit, the LED display and cameras can be synchronized seamlessly avoiding black field, scan lines, so that cameras can capture the most perfect images and videos without any visual artifacts.



*Note: Available for specific driver ICs.



Frequency & Frame Multiplication

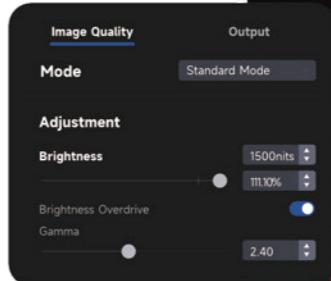
Improve the efficiency for multi-camera shooting



Brightness Overdrive

No loss of details in shadows
No overexposure in highlights

The display's brightness can be adjusted in real time to get the optimal



Ultra Low Latency

Essential for live events and broadcast

Latency can be minimized to 0 frame for broadcast sport events, film industries, etc. It greatly enhances the synchronization of camera shooting and stage acting.



TOURING RENTAL SOLUTION

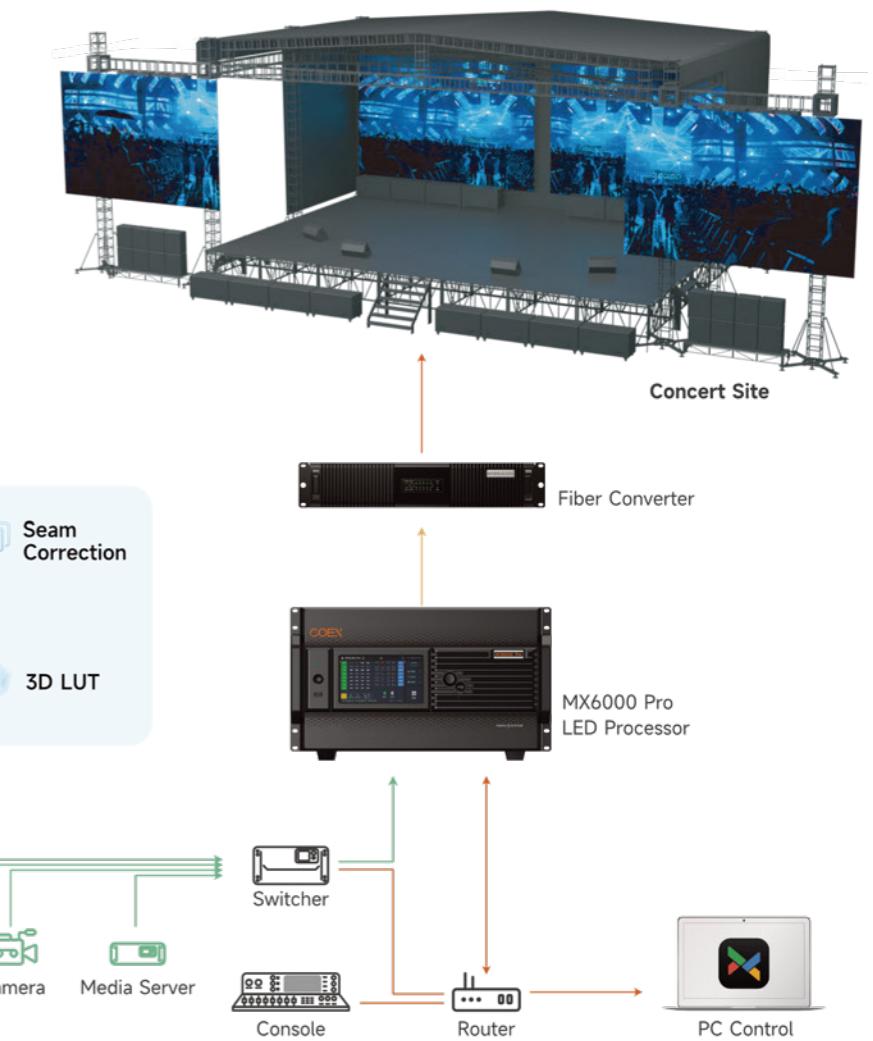
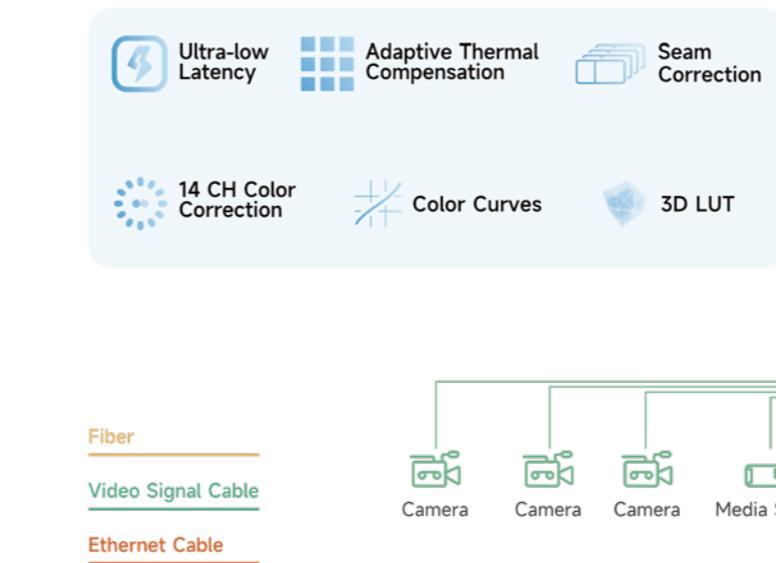
NovaStar Touring Rental Solution is user-friendly, and has many professional functions. With easy cable wiring and modular design, it effortlessly handles tasks of large loading capacity and 8K-level input/out-put or multi-source switching, and ultra long distance transmission. User can customize their processor hardware by flexible combination of input/output cards. It ensures the display performance without the need for any adjustments once powered on. Paired with VMP software, real-time control of the display screen significantly enhances operational efficiency.

The solution offers comprehensive functions for event stability, making it the perfect choice for touring.



Solution Introduction

NovaStar Touring Rental Solution is feature-rich, user-friendly, and excels in quick removal and installation. With lightweight equipment and straight forward wiring, it effortlessly handles tasks of large payload capacity and 8K-level input/output or multi-source switching, and ultra-long-distance transmission. The flexible combination of input/output cards allows for fine display without the need for any adjustments once powered on. Paired with the innovative Visual Management Platform (VMP), real-time control of the display screen significantly enhances operational efficiency. The solution offers comprehensive support for event stability, making it the perfect choice for touring rental scenarios.



LARGE SCALE XR / VP SOLUTION

The large scale xR/VP virtual production scenario involves the use of LED Screens to create an expansive shooting background screen (with an area ranging from 200 to 1000 square meters, often in the shape of curved screen or dome screen). With computer-generated 3D scenes, actors and props, an immersive scene is created. It's widely used in film production, television shows, conferences, and advertising.

In large scale studios, LED display control system is a crucial component, responsible for accurately displaying video sources on the screen.

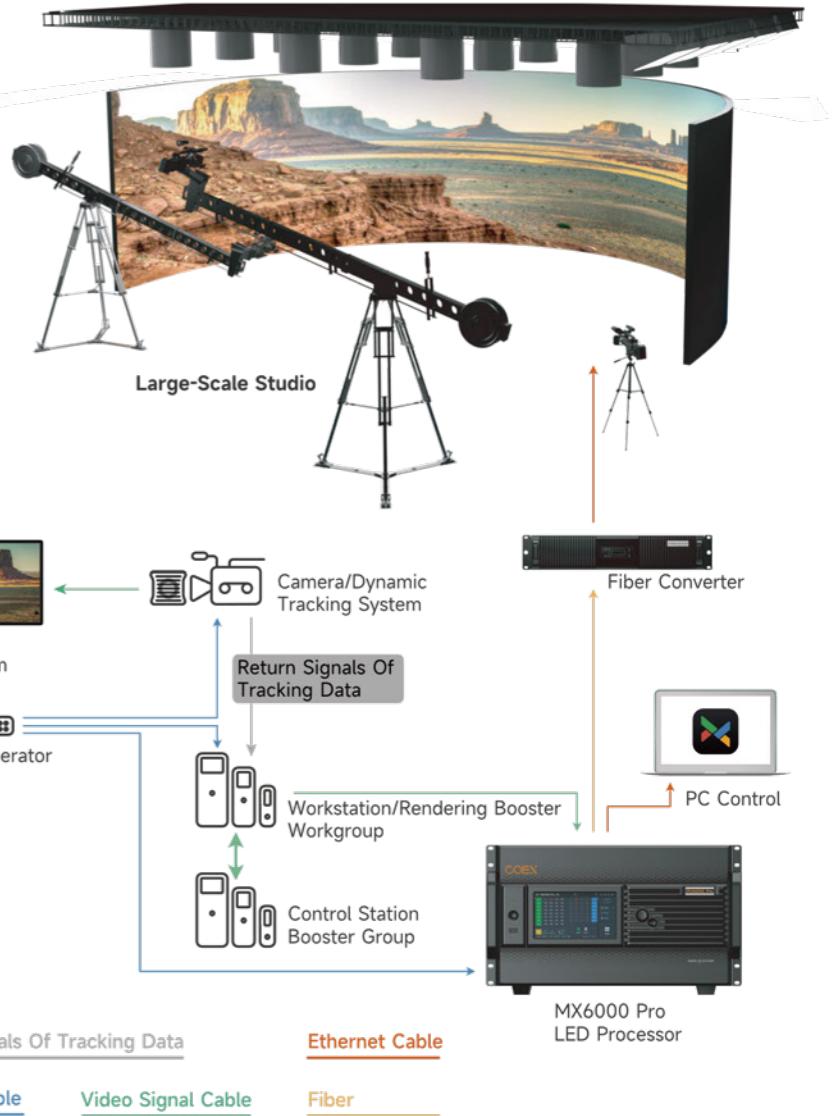
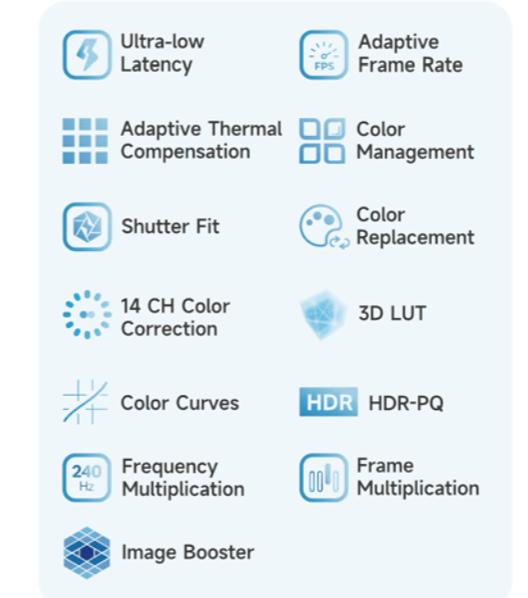
Therefore, large studios have strict requirements for the functionalities, image quality, and system stability of the control system. Besides, large studio screens usually have high resolution, and often encounter challenges such as multiple devices management and too-complex structures.



Solution Introduction

NovaStar's Studio Solution includes the flagship MX6000 Pro processor, A10s Pro and XA50 Pro receiving card, and VMP software. It is designed to meet the high and strict requirements of virtual production. The stunning image quality and intuitive control will empower users to create an immersive virtual shooting studio.

The MX6000 Pro is modular design, in which users can choose to use 4K or 8K input cards. The loading capacity can be up to 141 million pixels with 10G or 40G optical output available. Additionally, it can accommodate SMPTE 2110 100G signal inputs. With one device serving large studios, this solution provides a streamlined and professional control system for large scale studios.



SMALL TO MID-SIZE XR / VP SOLUTION

The small to mid-size xR/VP scenario refers to construct a compact multi-screen environment using LED Screens (an area ranging from 50 to 200 square meters). The structures are often angled screen, and floor screen or curve screen combined.

This scenario combines virtual reality and extended reality techniques to create a comprehensive virtual production technology that simulates realistic scenes in a 3D virtual space. It has been widely used in advertising, gaming, conferences, and stage performances.

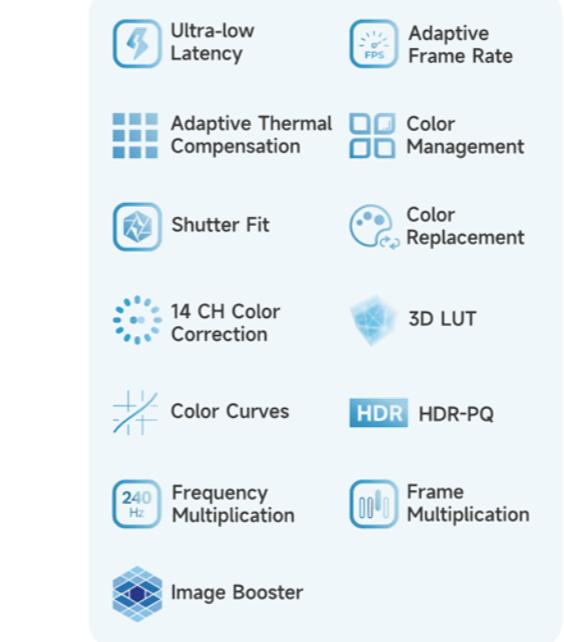
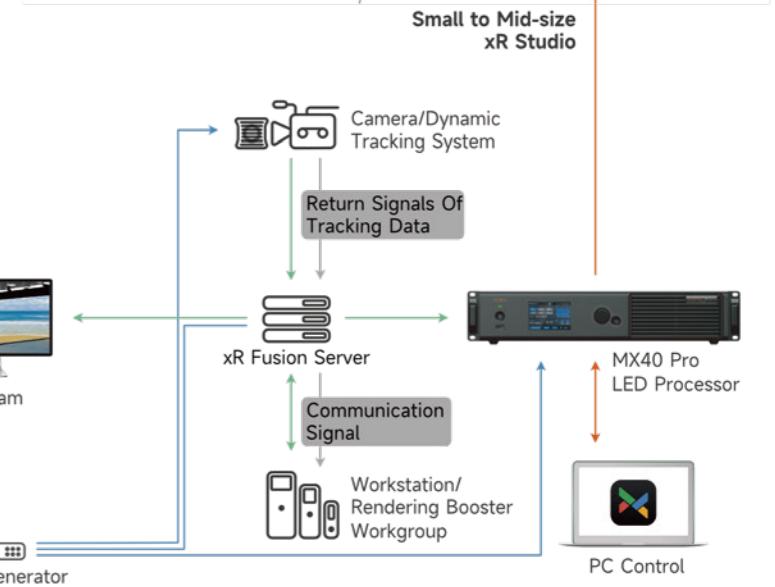
In xR shooting, LED screen control system is a crucial part. It plays a vital role in accurately displaying video sources on the screen and synchronizing with peripherals such as blending servers and cameras. Therefore, in xR shooting scenarios, the control system is expected to fulfill various functional requirements, including user-friendly software operation, flexible color processing, precise grayscale display, ultra low latency, and synchronization with video sources and cameras.



Solution Introduction

Designed for small to mid-size xR / VP projects, NovaStar's MX40 Pro and MX2000 Pro, combined with VMP software and A10s Pro receiving card, offer a professional LED control system solution.

This solution incorporates advanced features tailored for virtual shooting, equipped with cutting-edge image enhancement technologies. It effectively addresses issues like black field, scan lines, color deviation, and loss of details. It creates a shooting environment that fully equals real world.



BROADCAST SOLUTION

In the field of broadcast and television, LED technology is revolutionizing the traditional industry by offering higher resolutions, larger screens, and more flexible and intelligent display solutions. These advantages have propelled upgrades across the industry. LED screens with high resolution, brightness, and contrast ratios provide an outstanding visual experience. However, the broadcasting industry imposes strict requirements for color accuracy, stable screen refresh rates, and synchronization with cameras. So more advanced and specialized LED control solution is required.

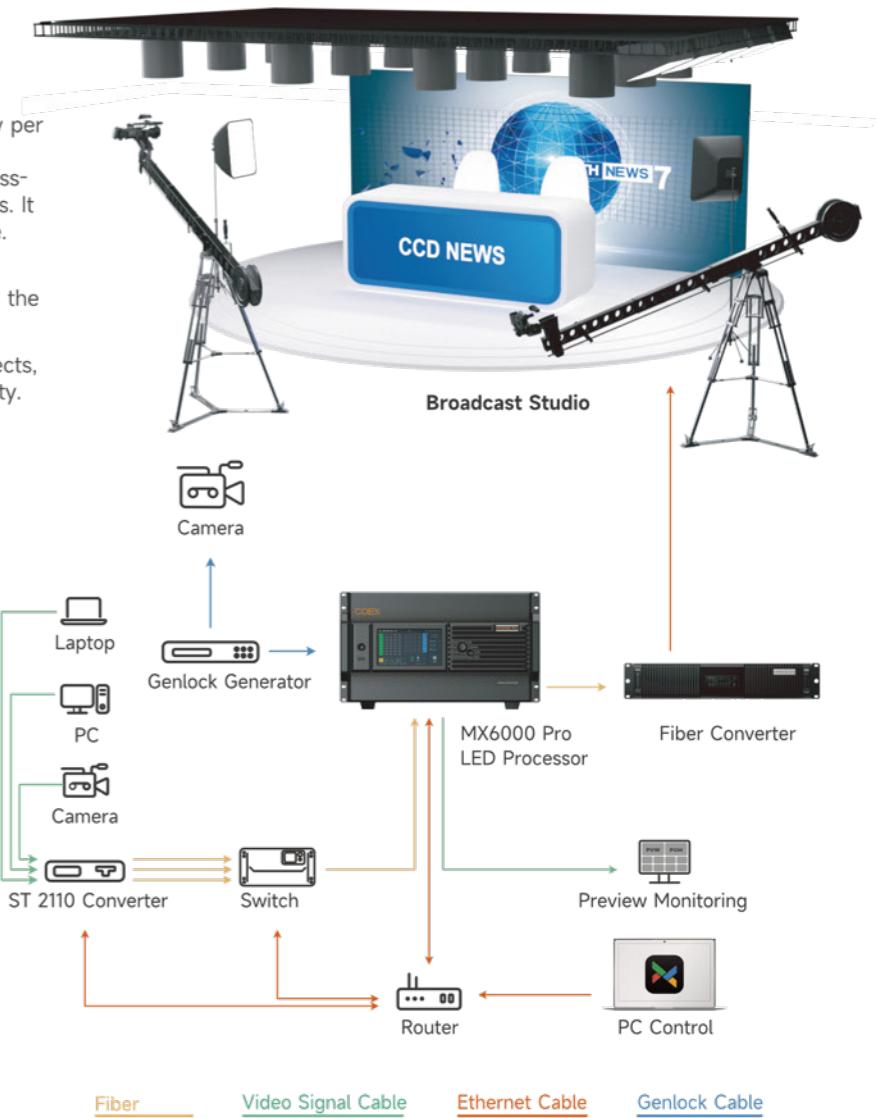
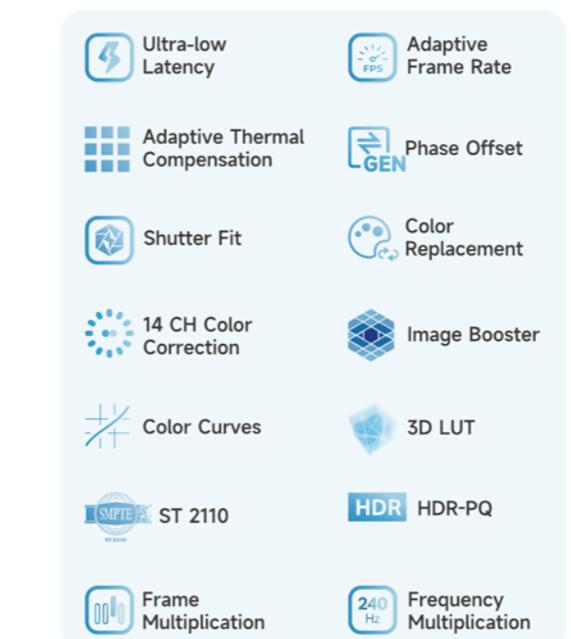


Solution Introduction

MX6000 Pro is the milestone processor in COEX series embedding remarkable features. With 16K loading capacity per output card, HDR image quality, and ultra low latency, it ensures the highest standard of image quality, color processing, and synchronization between LED display and cameras. It has multiple input and output cards for users to customize.

The SMPTE ST 2110 input card can accept video source through 100G or 25G optical interfaces, greatly simplifying the system setup process.

MX6000 Pro is your reliable partner for broadcasting projects, simplifying your system structure and ensuring high stability.



Visual Intelligent Control Platform (VICP)

One-stop Centralized Management and Control Solution

Intelligent management and control in all scenarios. Multiple devices such as video broadcast control, large-screen switch control and environment control are connected, managed and scheduled in a unified manner. Simplify system operation and management for users.



FULL-SCENE VISUAL CONTROL



Real-time display of ET1S-G, ET2S-G, ET4S-G, ET16S-G and H series input preview, monitoring, layout etc.; and it can switch media program, scene and signal source with one-click. Also support IPC preview and one-click PTZ Control.



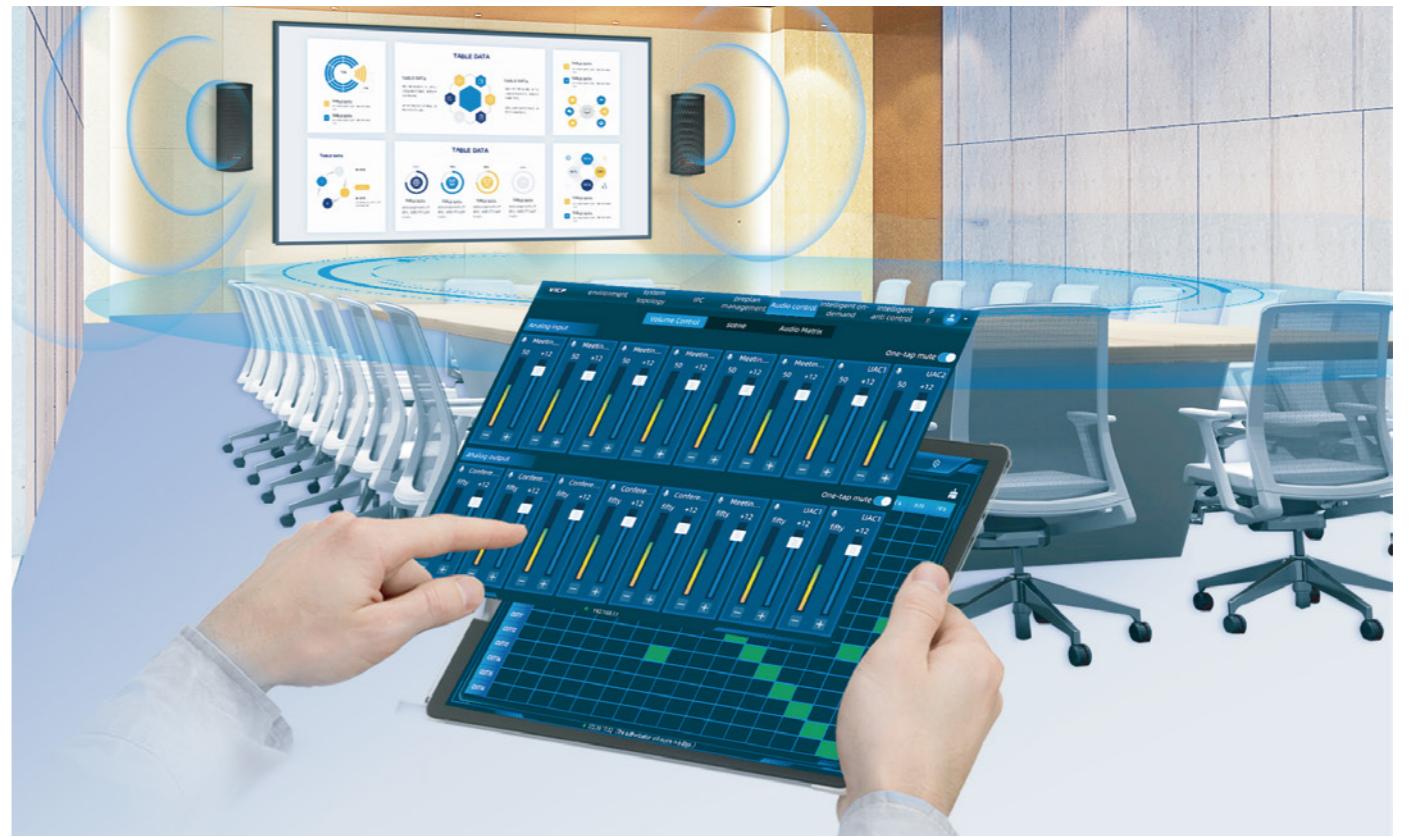
Remote Desktop

Software KVM, flexibility and efficiency.



Audio Input/Output Adjustment

Coordinate with DAP series audio processor for audio adjustment.



Release Media on Digital Signages

Coordinate with TB series controllers, to control and release medias on multiple digital signages.



Components of the System

Video Splicing Processor



H2, H5, H9, H15, H20

Media Server



ET1S-G, ET2S-G, ET4S-G, ET16S-G

Intelligent Control Processor



Vunit3000

Digital Audio Processor



H-DAP44, H-DAP88, H-DAP1616

All-In-One Controller



VX400Pro, VX600Pro, VX1000Pro, VX2000Pro

Multi Media Player



TB30, TB50, TB60

Visual Intelligent Control Platform



VICP
(AppStore, Contact NovaStar Team to Get it)

Visual Integrated Management Platform



VIMP
(Windows, Linux)

Visual Interface Designer



VI Designer
(Contact NovaStar Team to Get it)

ALL-IN-ONE CONTROLLER

New VX Pro Series

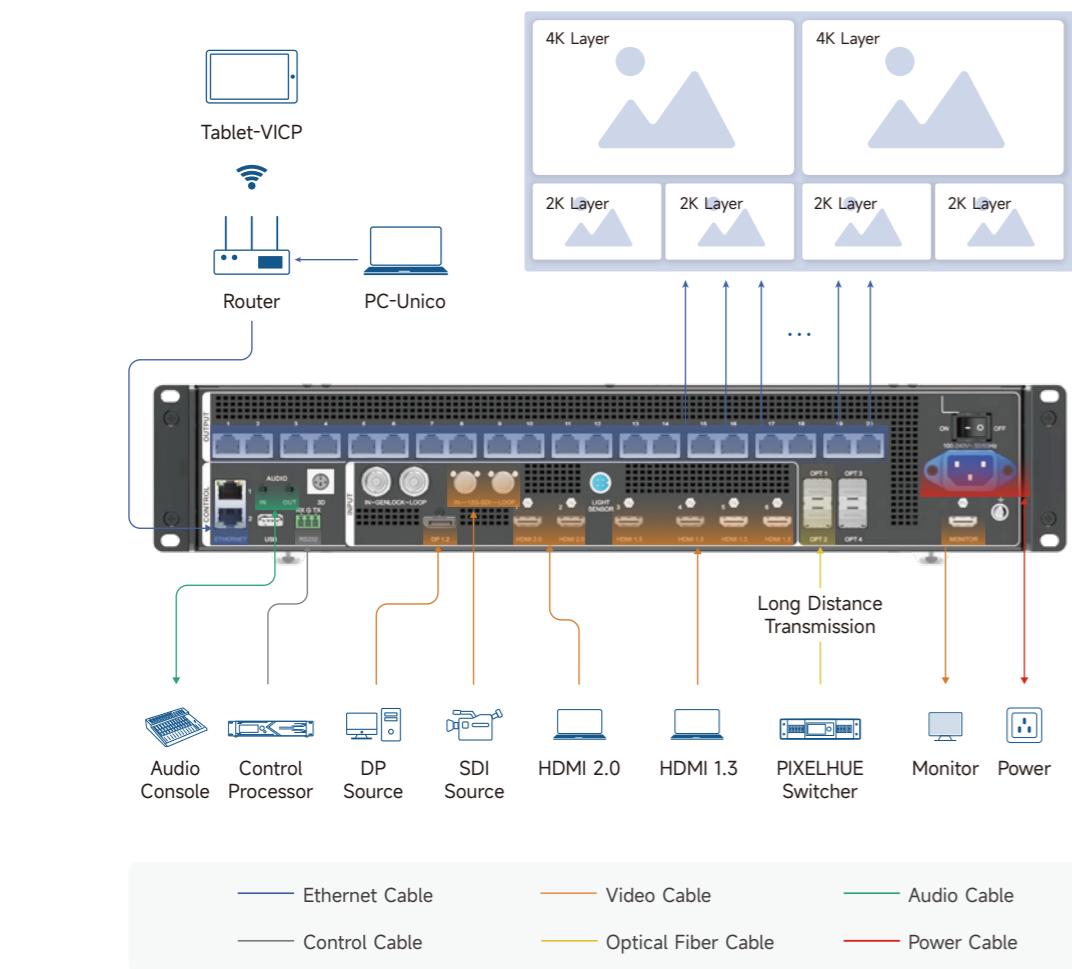
Revolutionary Upgrade, Ultimate Intelligent Control

NovaStar's newly upgraded VX Pro series is an all-in-one controller combining video processing and LED controlling. The functions are freshly upgraded and a new 20-Ethernet-port device is added. The loading capacity of the whole series of products covers 2.6 million-13 million, which is free to choose.

The product's industrial-grade casing, robust video processing and transmission capabilities make it suitable for complex operating environments. It is widely utilized in high-end rental, stage control and engineering applications for fine-pitch LED screens.



Solution Topology



Core Features

Real 4K Inputs

The entire series is equipped with HDMI 2.0 interfaces, making image clearer.

Loading Capacity From 2.6 Million to 13 Million Pixels

Available configurations: 4 ports / 6 ports / 10 ports / 20 ports.



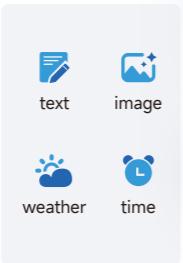
Multiple Layers and Presets

- VX2000 Pro supports 12 × 2K layers, others support 6 × 2K layers.
- Increased preset quantity up to 256.



Upgraded OSD Features

Now supports text, image, weather, time — with customizable settings to fit your



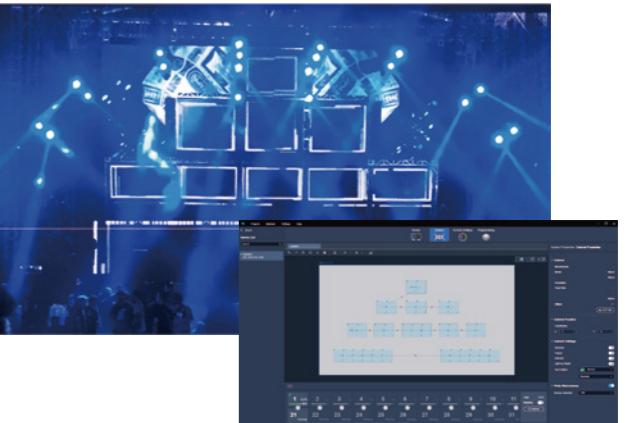
USB Playback

Insert a USB drive for instant plug-and-play convenience and use a USB source as an input source, allowing for convenient testing and video playback.



Free Topology

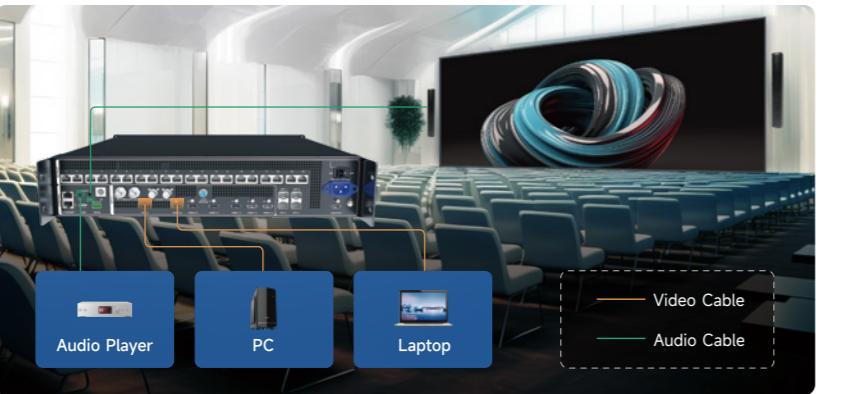
Without rectangle restriction, loading capacity is calculated based on the physical cabinet, enhancing Ethernet port utilization and making configuration easier.



(*Specific receiving cards are required.)

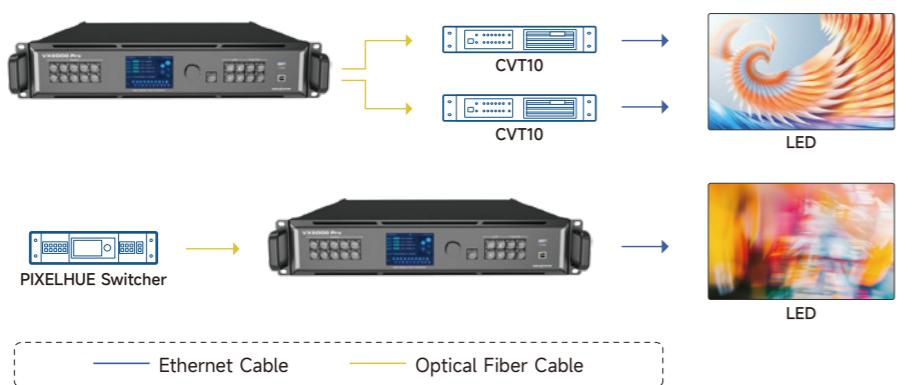
Independent Audio Connector

Supports switching between independent audio and accompanying audio, no requirement for additional audio device.



Flexible Fiber Solution

10G OPT ports, self-adaptive input/output, optical transmission of LED signals and video signals, optical signal and network signal backup, flexible and reliable.



Multiple Operation Methods

Use VICP App to switch inputs and presets, adjust brightness and so on, easy, friendly and convenient.



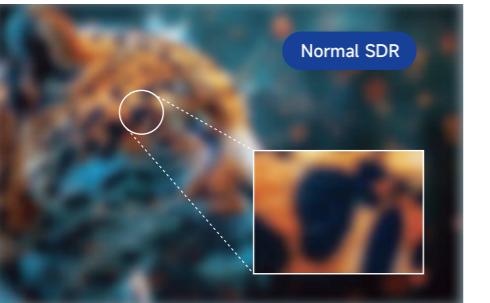
Remote Control

Control the device like TV. Effortless and efficient.



One-Click HDR/HLG Enhancement

Unlock richer colors and clearer details with HDR/HLG support on VX2000 Pro for more lifelike visuals.



Brand New Software, B/S Structure

Compatible with macOS Windows and Web;
One software controls all;
Visualized control interfaces. User-friendly experience.



Multi-language Menu Support

Intuitive multi-language menu for users worldwide.



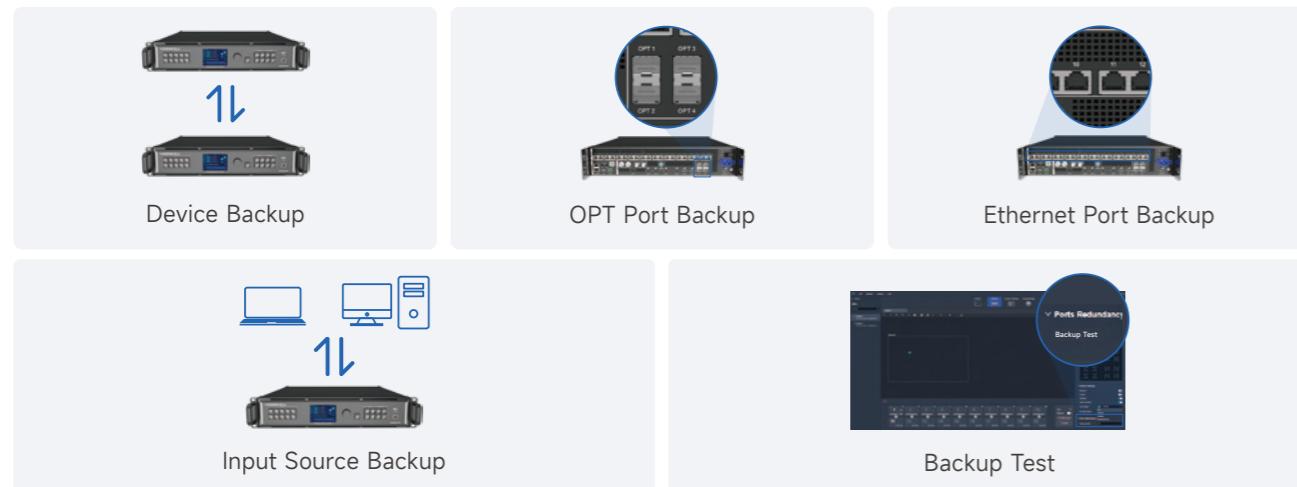
Three Working Modes

Video controller mode, Fiber Converter mode and ByPass mode.



End-to-End Backup

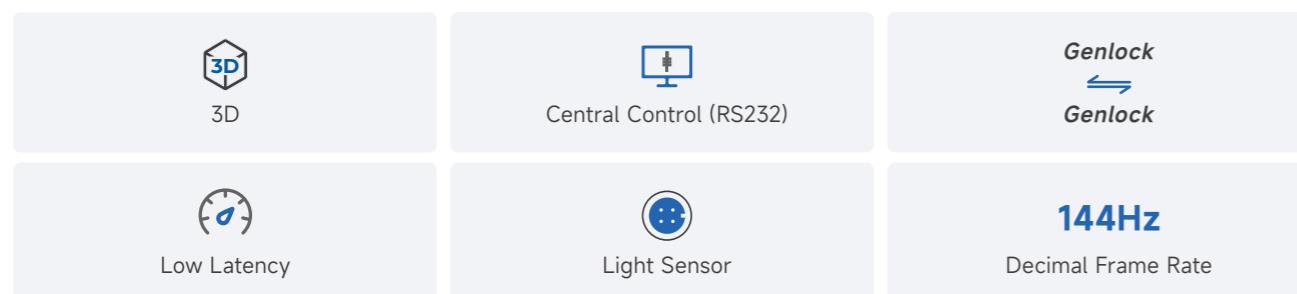
Complete full-link backup ensures stability on-site.



Specifications

Product Model	VX400 Pro	VX600 Pro	VX1000 Pro	VX2000 Pro
Loading Capacity	2.6 Million	3.9 Million	6.5 Million	13 Million
Maximum Width(Pixel)	10240	10240	10240	16384
Maximum Height(Pixel)	8192	8192	8192	8192
Input Ports	1 × HDMI 2.0(IN&LOOP) 2 × HDMI 1.3 1 × 3G-SDI(IN&LOOP) 1 × 10G OPT 1 × USB3.0	1 × HDMI 2.0(IN&LOOP) 2 × HDMI 1.3 1 × 3G-SDI(IN&LOOP) 1 × 10G OPT 1 × USB3.0	1 × HDMI 2.0(IN&LOOP) 2 × HDMI 1.3 1 × 3G-SDI(IN&LOOP) 1 × 10G OPT 1 × USB3.0	1 × DP 1.2 2 × HDMI 2.0 4 × HDMI 1.3 1 × 12G-SDI(IN&LOOP) 2 × 10G OPT 1 × USB3.0
Output Ports	Ethernet Port × 4 OPT × 2	Ethernet Port × 6 OPT × 2	Ethernet Port × 10 OPT × 2	Ethernet Port × 20 OPT × 4
Independent Audio IN&OUT	3.5mm IN&OUT	3.5mm IN&OUT	3.5mm IN&OUT	3.5mm IN&OUT
Previewing Port	1 × Monitor(HDMI1.3)	1 × Monitor(HDMI1.3)	1 × Monitor(HDMI1.3)	1 × Monitor(HDMI1.3)
Layers	6 × 2K	6 × 2K	6 × 2K	12 × 2K
OSD	Text, Weather, Time, Picture	Text, Weather, Time, Picture	Text, Weather, Time, Picture	Text, Weather, Time, Picture
Presets	256	256	256	256
Synchronization Settings	Video Input Source	Video Input Source, Genlock		
U-Disk	Supports USB Playback and Upgrade			
HDR/HLG	/	/	/	Support
Multi-language LCD Menu	Simplified Chinese, Traditional Chinese, English, Hindi, Spanish, French, Portuguese, Russian, Japanese, Korean, German, Vietnamese, Turkish, Thai, and Indonesian.			
More Functions	Light Sensor, Low Latency, Output Quality Settings, and Image Mosaic			
Control Methods	USB, TCP/IP, RS232			
Control Platform	NovaLCT, VICP, Unico, Handheld Remote Control			

More Functions



ET SERIES MEDIA SERVER

Professional · Powerful · Stable · Secure

The NovaStar media server is specifically designed for permanent display applications, such as media showrooms, conference rooms, and data centers.

It supports ultra-high resolution, pixel-by-pixel display with diverse creative splicing options.

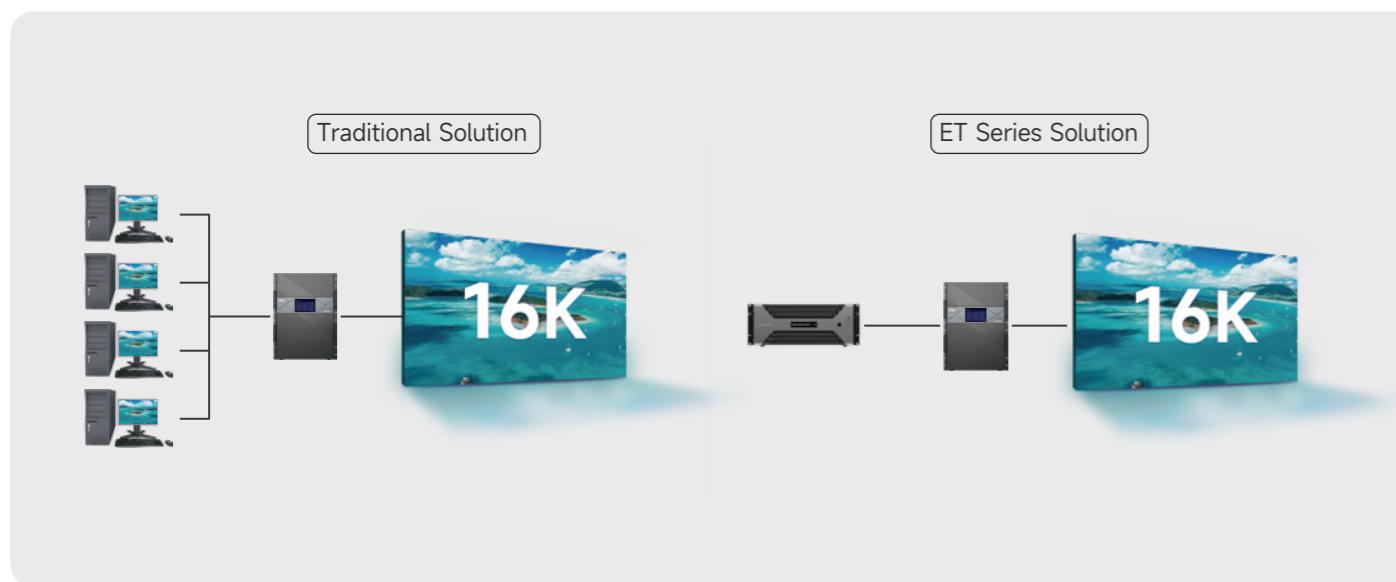
Paired with professional media playback and control software, it delivers powerful audio-visual-lighting processing and media scheduling capabilities, while also offering users convenient stage management and a fully visualized machine interface.



Ultra-High Loading Capacity for Pixel-by-Pixel Output

Clear Display

The ET series supports up to 16 channels of 4K2K@60Hz frame-synchronized output, enabling a single device to achieve 16K ultra-large screen or multiple 4K screens for pixel-by-pixel display. The entire series covers bandwidth from 2K to 16K, perfectly adapting to various application scenarios.



Multi-function Integration

Simplified

Integrated powerful features such as professional playback software, playback control computer, protocol command, and conversion device, simplifying complexity.

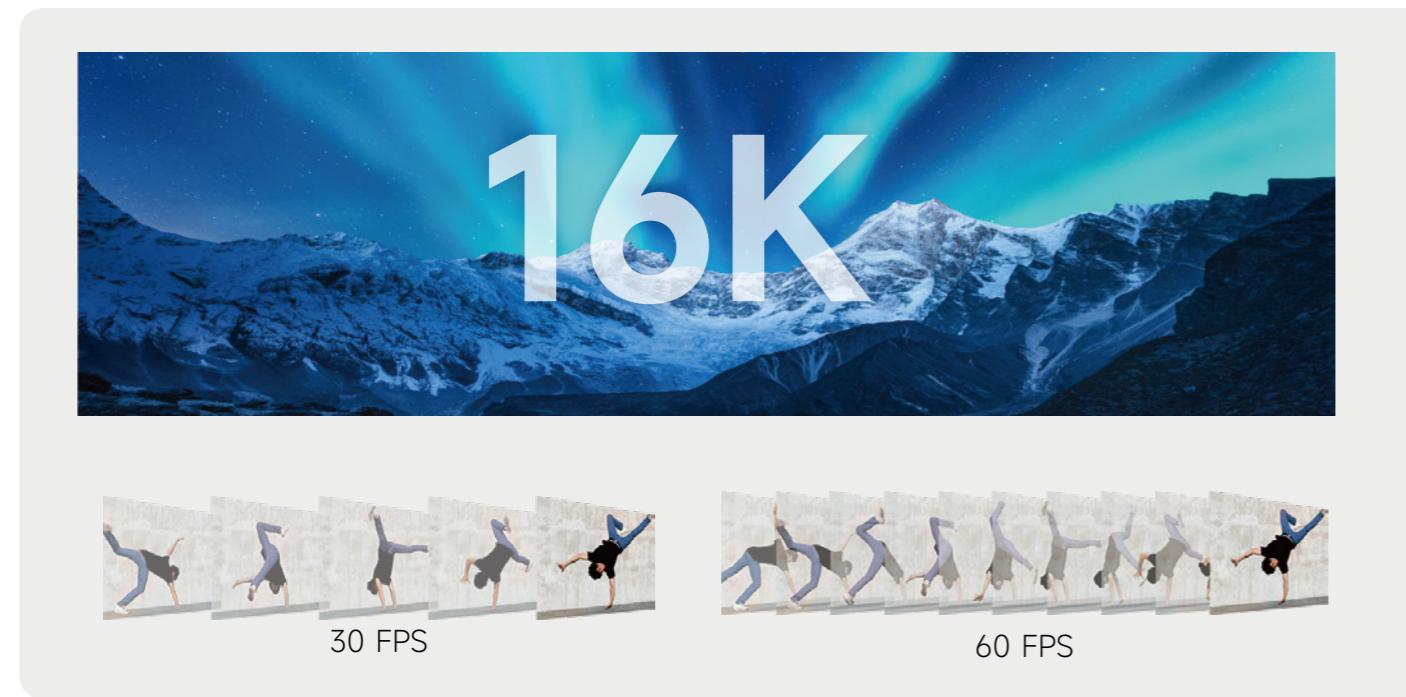
It effectively addresses issues like interface compatibility and control complexity, making it easy to manage display playback control.



GPU Hardware Decoding

Delivers Ultra-clear and Smooth Playback

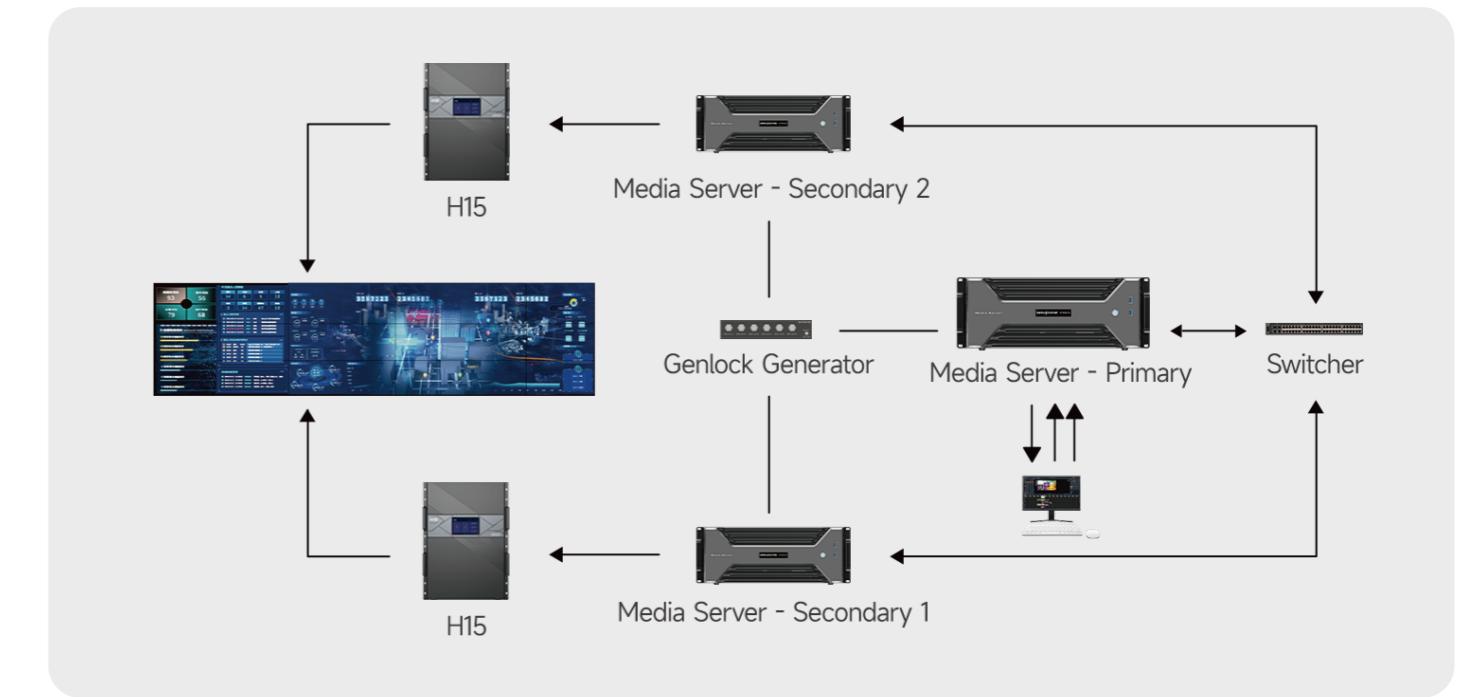
The ET series supports GPU hardware decoding and accelerated rendering effectively reducing CPU usage. It supports up to 16 channels of 4K2K@60FPS decoding output, ensuring smooth high-definition video playback without lag or frame loss.



Seamless Frame Synchronization

Across Multiple GPUs

With upgraded FSD frame synchronization technology, multiple servers and GPUs deliver ultra-smooth playback and perfectly synchronized output for massive displays. Primary-Secondary data synchronization ensures seamless control, enabling limitless expansion of topology. Multiple devices and screens can be centrally managed, offering a simple and efficient solution.



HDR Ultra High-Definition Display

Restoring Reality

Supports HDR display, ensuring that the screen delivers delicate and realistic display even in high-brightness and low-gray areas. It reveals more image details, enhancing color expression and restoring every stunning pixel.



Integration with Diverse External Protocols

Flexible Operation

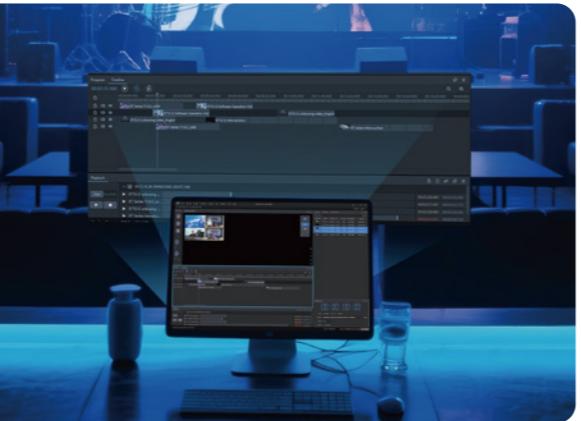
Seamless control with Stream Deck, MIDI, DMX, OSC, and iPad visualization. It can trigger video playback from a lighting console, drive effects in synchronization with the music beat, and customize visual control interfaces on iPad for a truly unified audio-visual-lighting experience.



Timeline Management

Visualized Time Management

The ET Series Media Servers, integrated with Kompass FX3 Pro playback control software, enable complex and precise visual playback, supporting in-segment looping, batch adjustment, CUE tags, and control commands. Lock the timeline to the timecode for frame-accurate sync across media, lights, and audio.



LAN-Based Remote Publishing & Control

Simple Setup, Centralized Control

Designate any client as a Management Console to remotely publish content, control playback, and deliver the project files globally across all clients in the same LAN.

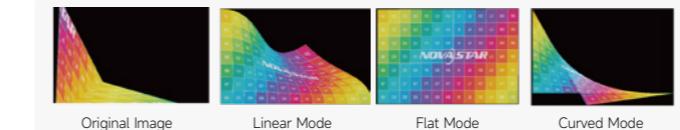


Creative display

Irregular-Shaped Modules

Adjustment Modes:

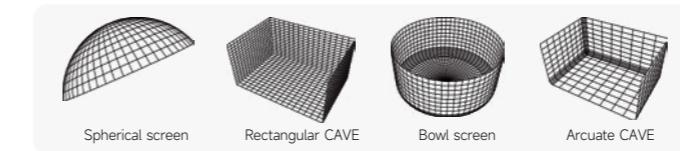
Different adjustment modes result in varying visual effects to meet the needs of irregular-shaped displays.



CAVE Immersive Creative Display

Beyond Imagination

3D Mapping combined with smooth playback control software Kompass FX3 Pro, crafting immersive creative solutions for enterprise showrooms, live studios, and diverse scenarios — unlocking the imagination behind every visual.



Blending Function

Smoother Visual Performance Display

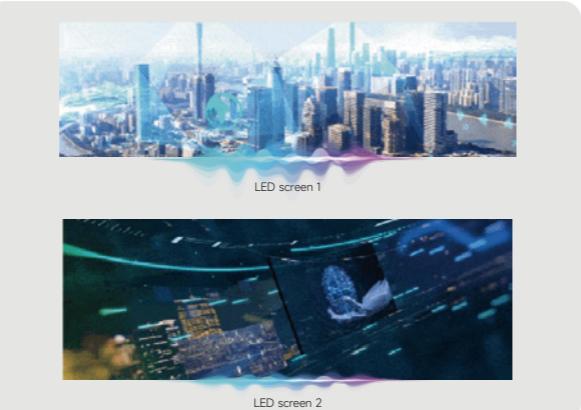
The blending function of media server realizes that multiple projectors output calibration and display smoother transition.



Independent Audio Playback

Facilitates Separate Audio For Each Screen

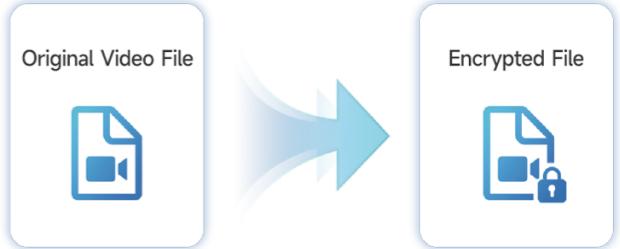
All media server devices support multi-channel output and flexible editing, offering versatile audio solutions for various live scenarios.



Comprehensive Protection of Digital Assets

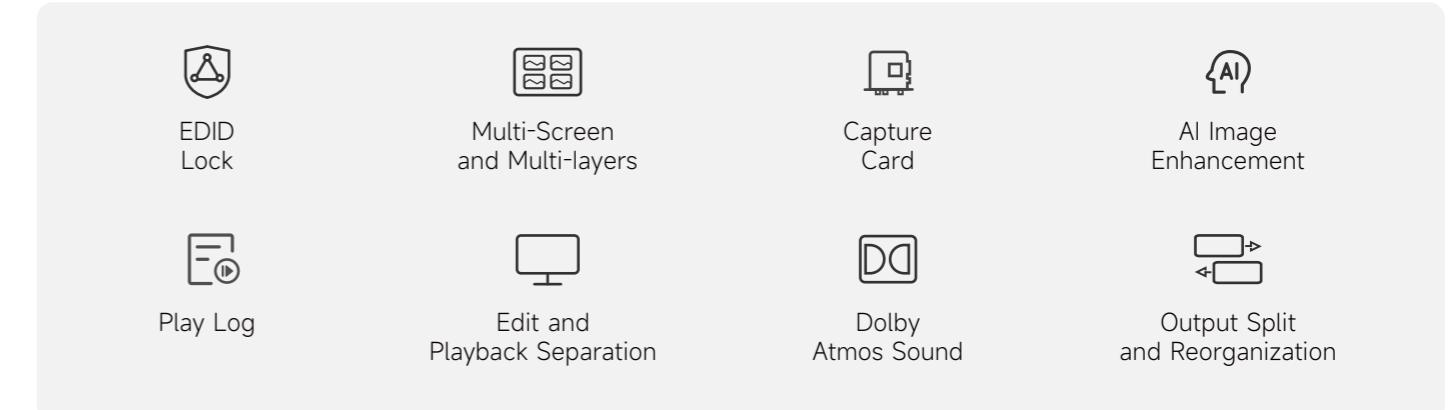
Ensuring Robust Security

It features unique video encryption technology, meanwhile, supports file exclusivity, password verification, and time-based authorization, establishing a robust digital asset protection system to safeguard information security.



Exclusive Use | Password Verification | Expiration Date

More Advantages



Specifications

Product	ET1S-G	ET1S-500G	ET2S-G		ET4S-G(P2)	ET4S-G(A4)	ET16S-G(2A4)	ET16S-G(3A4)	ET16S-G(4A4)
Chassis	1U		2U		4U			4U	
RAM	16G (DDR4)		16G (DDR4)		32G (DDR5)		64G (DDR4)		128G (DDR4)
CPU	5th Gen AMD Ryzen Processor	5th Gen AMD Ryzen Processor / 12th Gen Intel Core Processor	12th Gen Intel Core Processor (i5-12400)		12th Gen Intel Core Processor (i7-12700)		1x Intel Xeon Gold Processor		2x Intel Xeon Gold Processors
Storage (M.2 high-speed SSD)	250GB	500GB	500GB		250GB (system disk) 1TB (storage disk)		1TB		1TB (system disk) 960GB (storage disk)
Graphics Card	AMD5600HB (GPU)	AMD5600HB (GPU) / Intel® UHD Graphics	HPGT400		MPG2000/MPG2200	HPGA4000	2x HPGA4000+MPGT400 +Sync card	3x HPGA4000+MPGT400+Sync card	4x HPGA4000+MPGT400+Sync card
Loading Capacity	1x 4096*2160@60Hz		2x 4096*2160@60Hz		4x 5120*2880@60Hz	4x 5120*2880@60Hz	8x 5120*2880@60Hz	12x 5120*2880@60Hz	16x 5120*2880@60Hz
Decoding Capability	1x 4K2K@60fps or 4x 2K1K@60fps		1x 8K2K@60fps or 2x 4K2K@60fps		1x 8K4K@30fps or 3x 4K2K@60fps	1x 8K4K@60fps or 4x 4K2K@60fps	2x 8K4K@60fps or 8x 4K2K@60fps	3x 8K4K@60fps or 12x 4K2K@60fps	4x 8K4K@60fps or 16x 4K2K@60fps
Layers	20		40		No limits			No limits	
EDID Lock	√		√		√			√	
Cascading	√		√		√			√	
Frame Synchronization Splicing	/		/		/	√ (with sync card)		√	
Dual-machine Backup	/		/		√			√	
IPAD Control	√		√		√			√	
Protocol Control	√		√		√			√	
Operation System	Windows 10 Enterprise LTSC						Windows 10 Enterprise LTSC		



SERIES **DESIGN IT YOUR WAY.**

Most integrated
Modular design
4K / 8K and more
Extreme user friendly



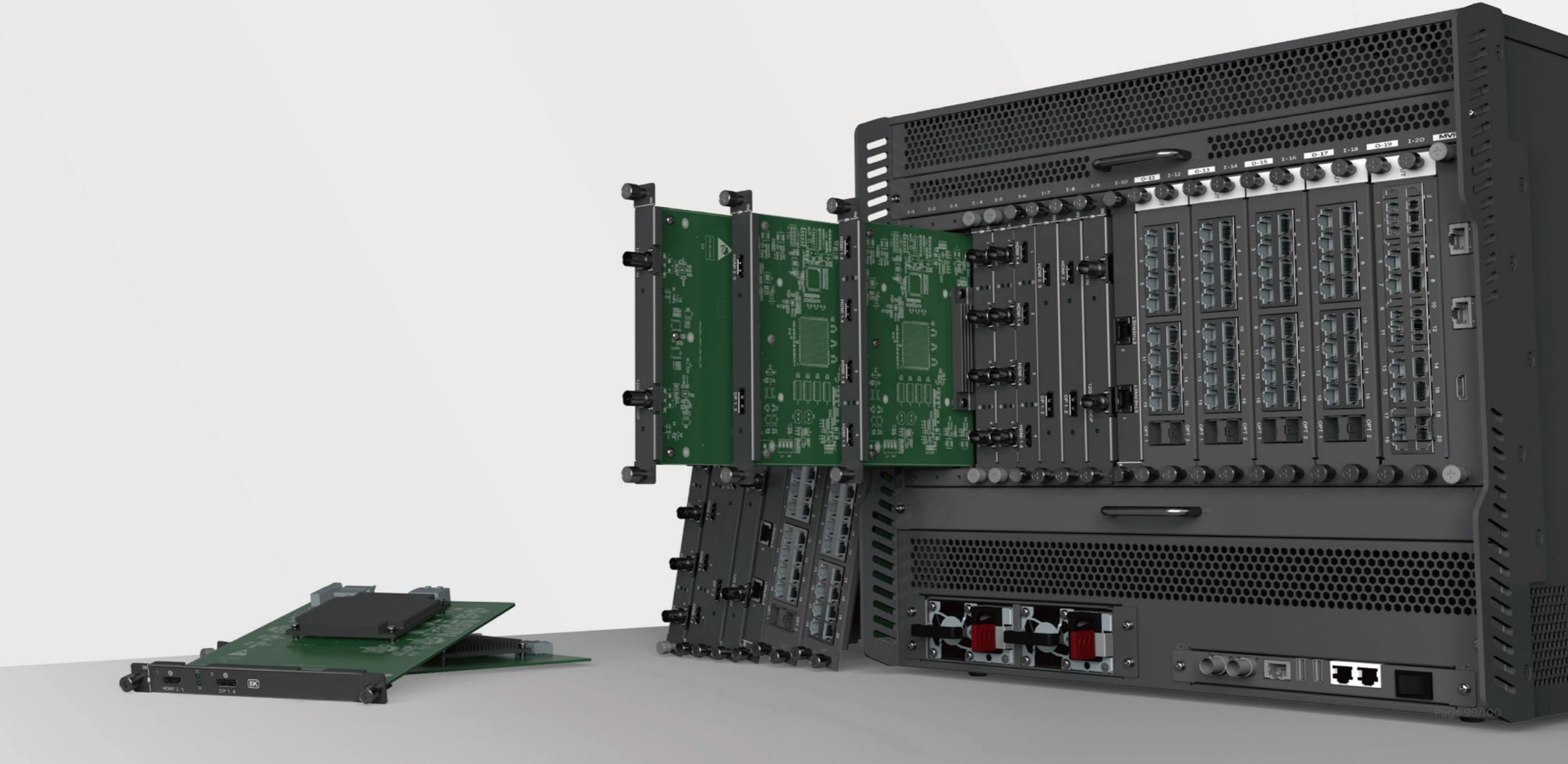
Modular Design

Input cards

HDMI2.1&2.0&1.4&1.3
Fiber input
DP1.4&1.2 & 1.1
3G & 12G SDI
DVI
IPC
NDI
ST2110
OPT
Audio

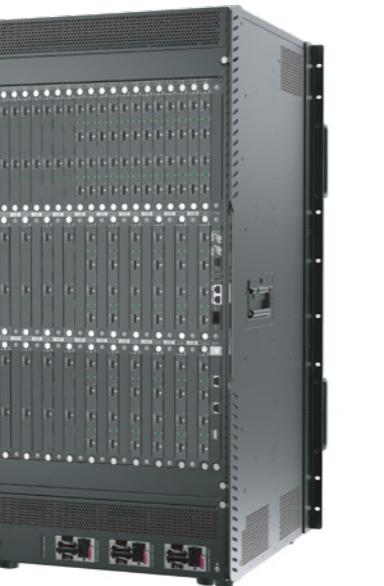
Output cards

16×RJ45+2×OPT
20×RJ45
MVR card
4×OPT
4×OPT Enhanced
4×HDMI1.3
4×DVI
1×HDMI2.0
4×3G SDI
1×12G SDI
4×HDBaseT
2×Audio



Highly Integrated

1 Device
520 Million Pixels
80×4K Inputs or 160 x2K Inputs



Visual Control

Drag and play



VICP



Apple Store



Google Store



Video over IP

SMPTE ST2110, NDI, HDBaseT



NDI

HDBTTM

Free Layers

SIZE & POSITION

16×2K per output card
4×4K per output card

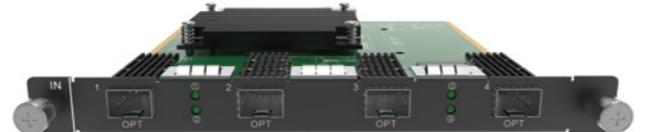


Fiber Solution



P20

10G SFP Up to 10KM

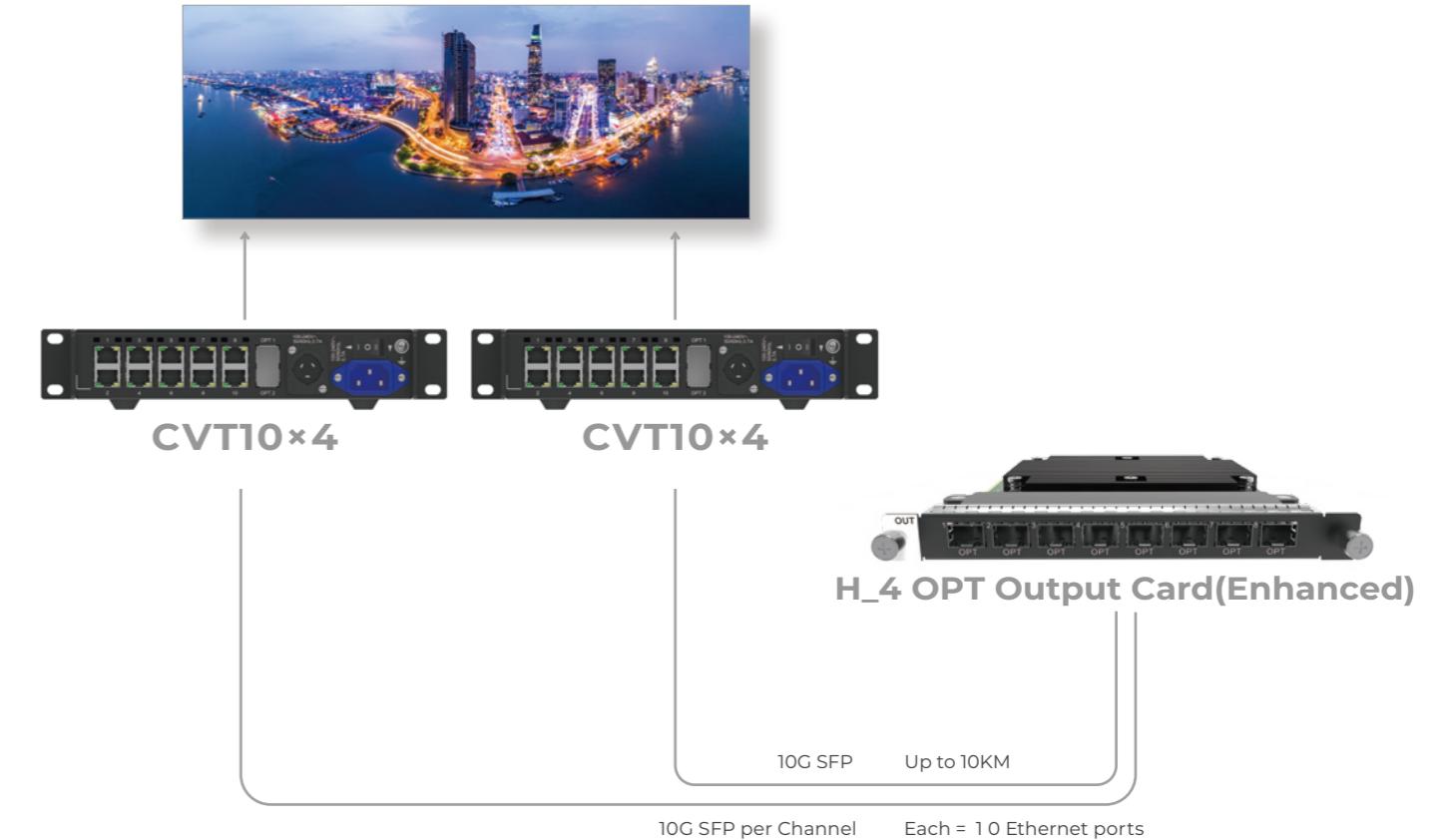


H_4 Fiber Input Card

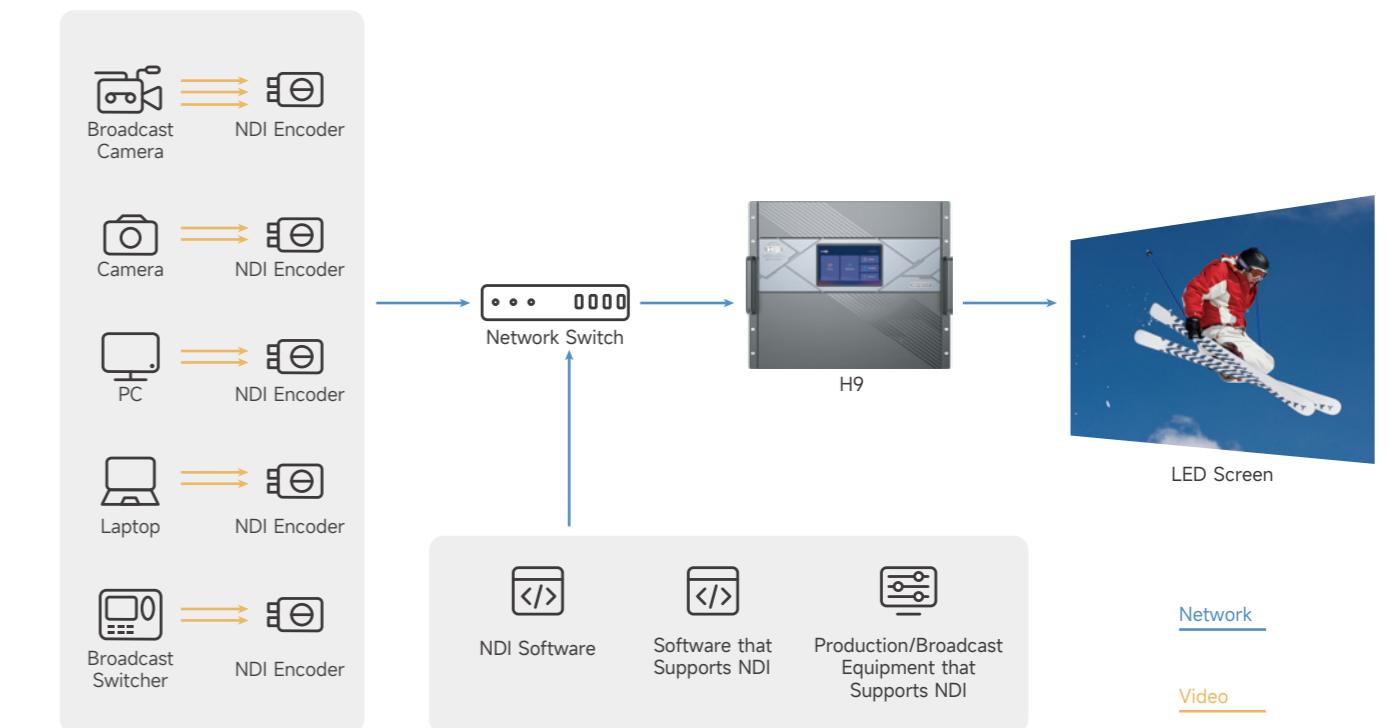
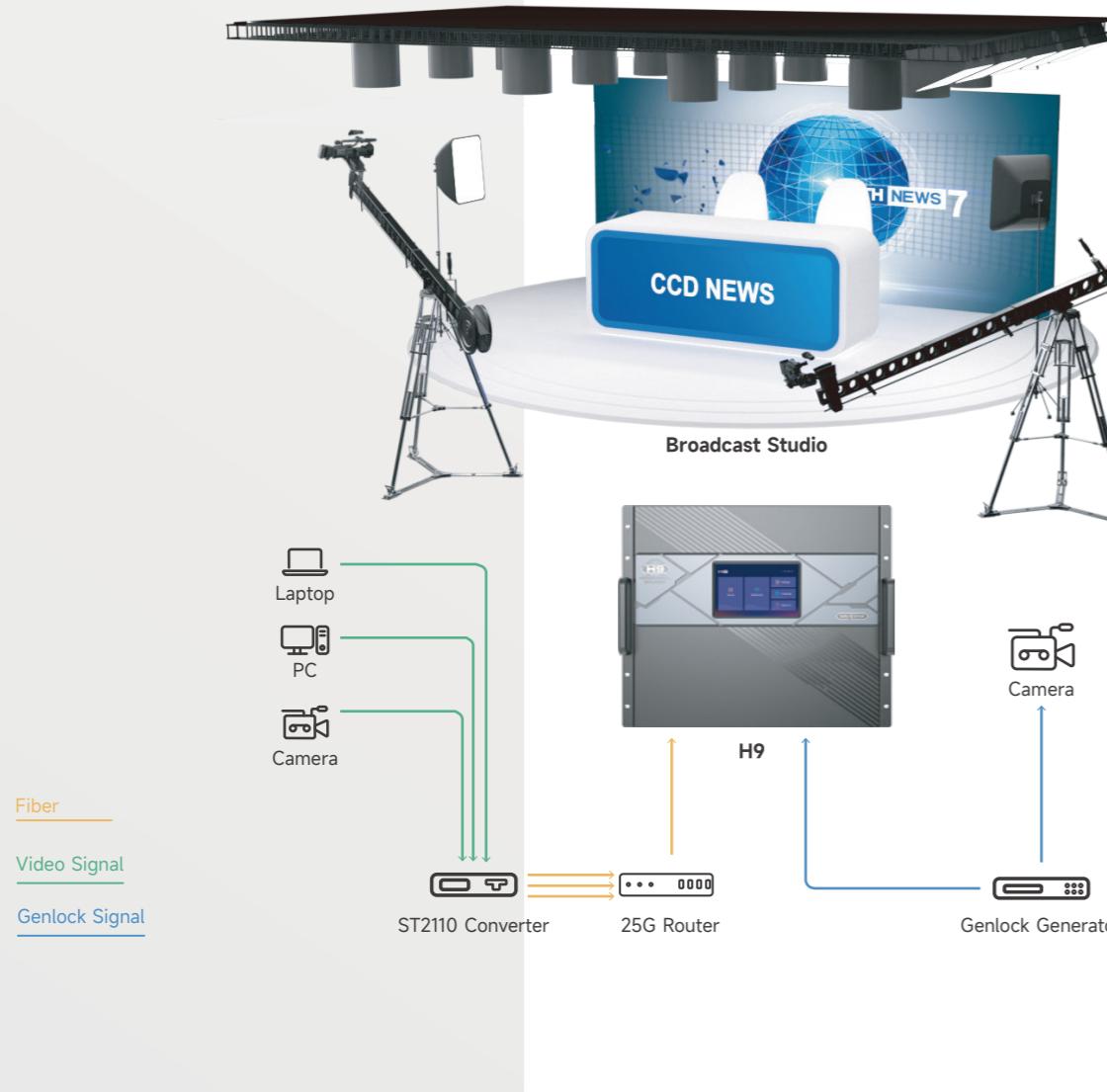
Support Independent/Mosaic mode

2×4K× 2K@60HZ

10G SFP Up to 10KM

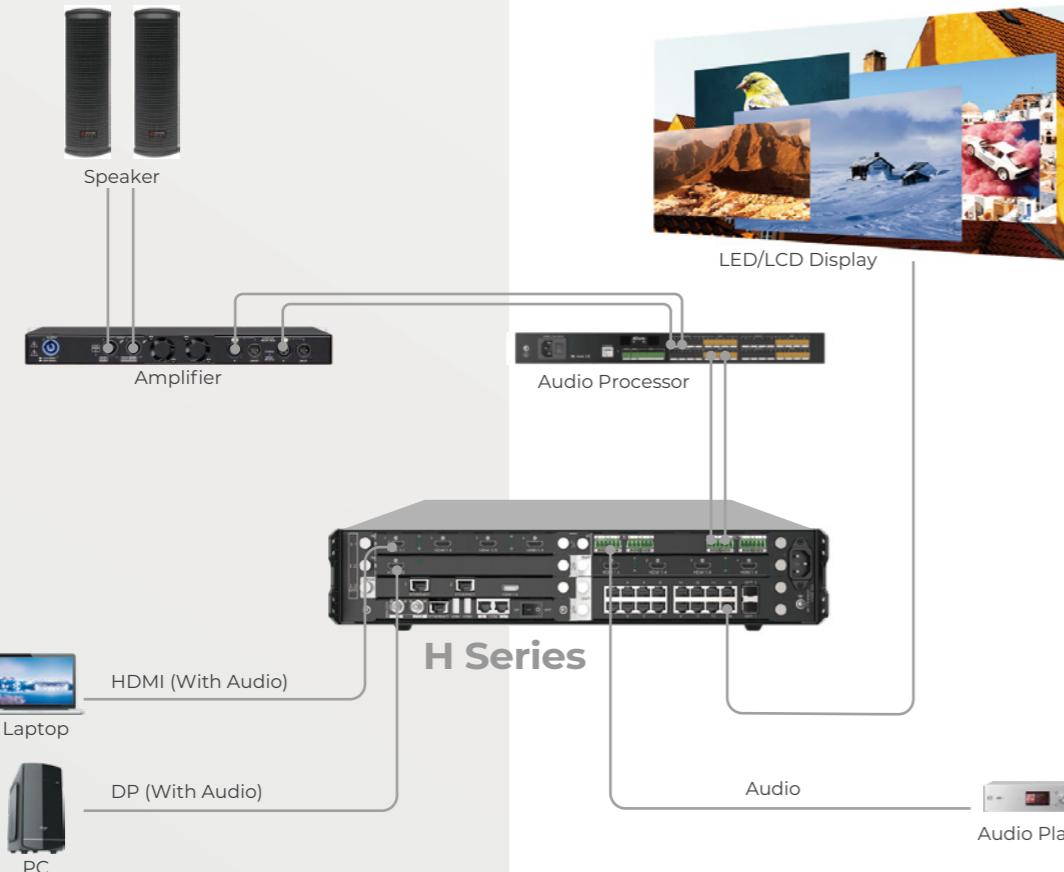


ST2110 Solution



NDI Solution

Audio Solution



Selection Guide

	H2	H5	H9	H9 (Enhanced)	H15	H15 (Enhanced)	H20
Chassis	2U	5U	9U	9U	15U	15U	20U
Max. Input Cards	4 input cards	10 input cards	15 input cards	15 input cards	30 input cards	30 input cards	40 input cards
Max. Output Cards	2 output cards	3 output cards	5 output cards	10 output cards	10 output cards	16 output cards	20 output cards
Max. Layers	32 Layers	48 Layers	80 Layers	160 Layers	160 Layers	160 Layers	320 Layers
Max Loading Capacity (H_4 OPT Output Card Enhanced)	52 million pixels	78 million pixels	130 million pixels	260 million pixels	260 million pixels	416 million pixels	520 million pixels

TU SERIES

INTELLIGENT CONTROL SOLUTION

4K Smart Playback Control
Excellent Vision at Hand



TU SERIES

INTELLIGENT PLAYBACK CONTROL PROCESSOR SOLUTION

TU series intelligent control solution is NovaStar's next-gen intelligent full link LED display control solution, which is smarter, more convenient and more reliable for single 4K and below LED display application scenarios. Its innovative intelligent configuration function, the newly upgraded convenient interactive interface, and the powerful cloud service messaging and maintenance application can provide users with the ultimate intelligent and boundless experience of LED display in anytime and anywhere.

The solution consists of TU intelligent control, VNNOX Media, VNNOX Care, by one mobile phone, which can achieve the LED intelligent configuration, application and maintenance of the full cycle easily, it is also the best choice for the user in the conference office display, exhibition hall display, advertising media display and other application scenarios.

Mobile informatization, Cloud-based, Intelligent

Massive Loading Capacity, Free Wiring

2 models to choose from: 20 × RJ45 port and 6 × RJ45 port, with loading capacities ranging from 2.6 million to 13 million pixels
A single device supports: Max. Width 16384 pixels; Max. Height 8192 pixels
Free wiring, no rectangle limitation

Ultra-large Loading Capacity
13 Million

Max. Width
16384 Pixels

Max. Height
8192 Pixels



Enhanced Image Renewed Sensory Experience

AI Image Enhancement

AI algorithm intelligently recognizes playback content and conducts frame-by-frame fine-tuning, comprehensively optimizing color saturation, brightness, sharpness, and dynamic compensation, recreating exceptional image quality.



Full-link HDR Image Quality

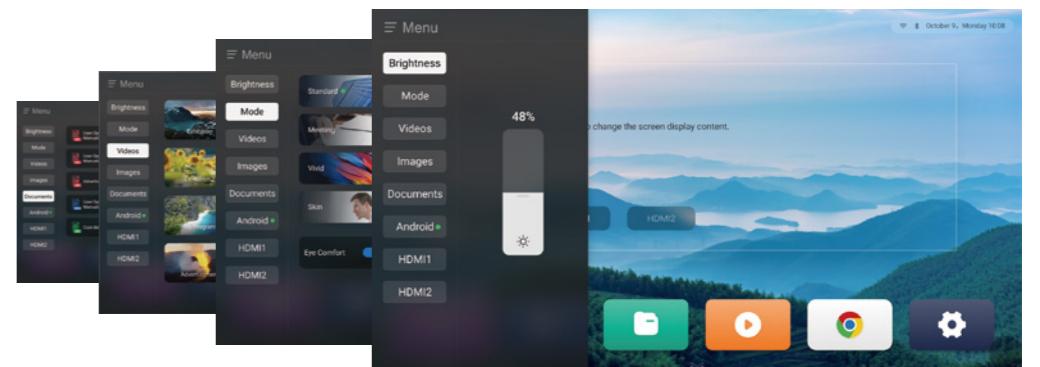
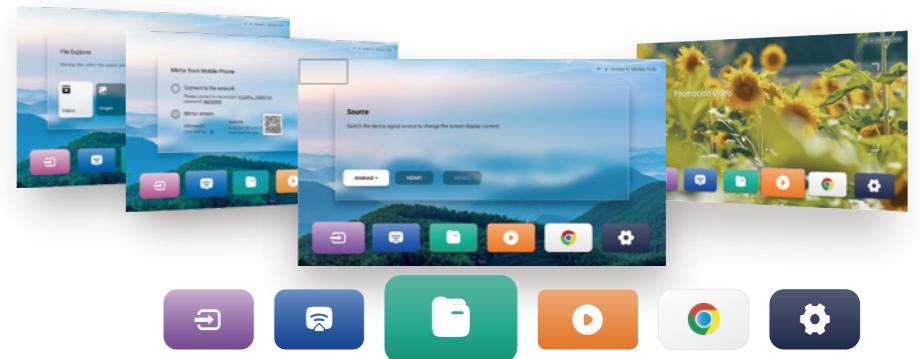
Wider color gamut, higher contrast, and richer details. No overexposure in highlights, no loss of details in shadows, presenting a vivid and lifelike realistic vision.



Extreme Experience Smooth and Easy

All-new Interaction Friendly Experience

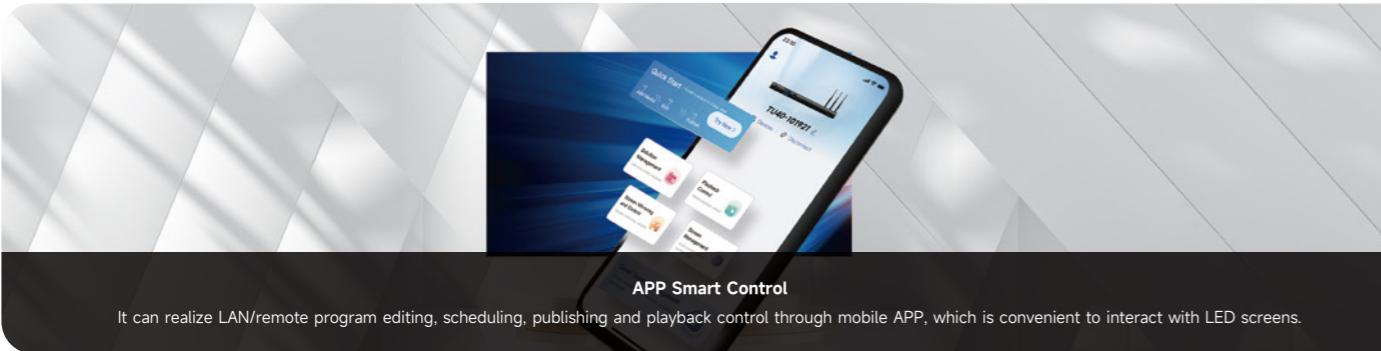
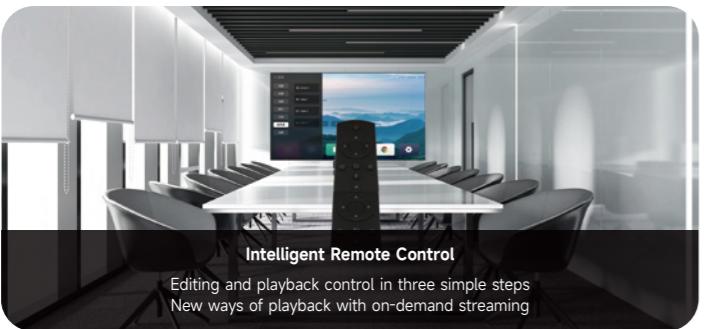
All-new smooth interaction design
Simple and easy operation interface



New touch assistance, OSD menu one-click call, and other rich functions

Bring the new experience to users

Multiple Playback Control Methods



Wireless Mirroring, Consistent Display

Multiple mirroring mode, easy to connect.

High stability, stay online more than 72 hours.

Smooth display, less than 80ms latency.

9 split screen display, more efficient screen mirroring.



Intelligent Configuration Quick and Effective

Traditional solution:

LED configuration often requires professionals to carry professional software and equipment for several hours even half a day to complete, with low efficiency and high cost.

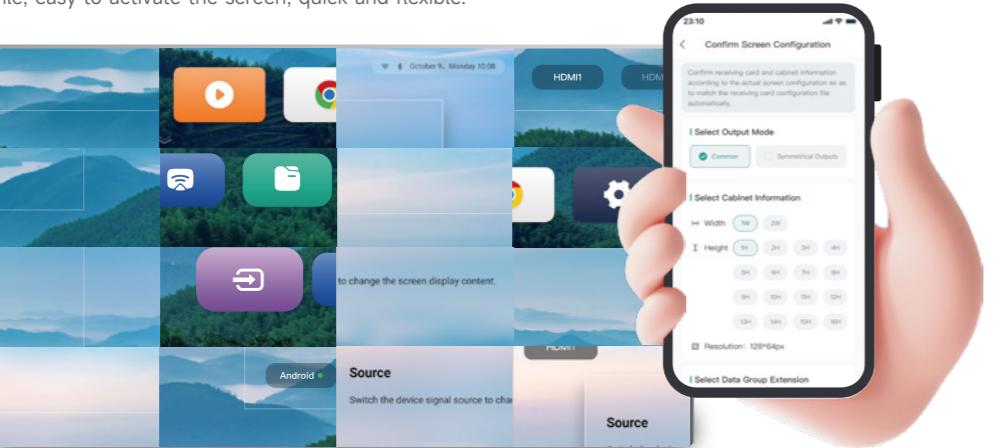
TU solution:

1 mobile phone, 1 APP, 10 minutes, can quickly complete configuration, 0 cost to get started, simple and efficient.



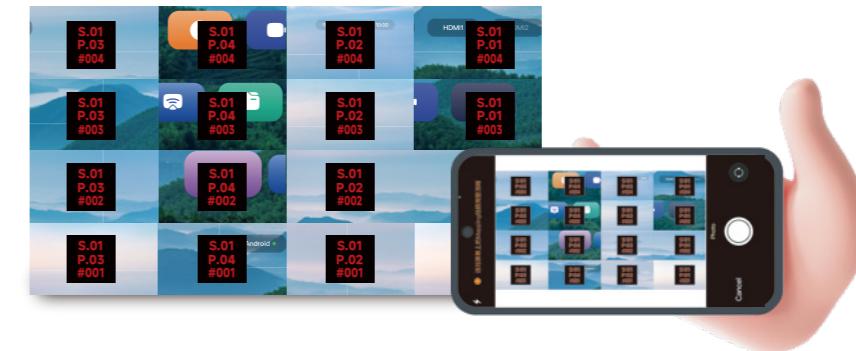
Scan the Code with Your Phone to Receive the Configuration File

Automatically identify, obtain and issue the receiving card program and configuration file, easy to activate the screen, quick and flexible.



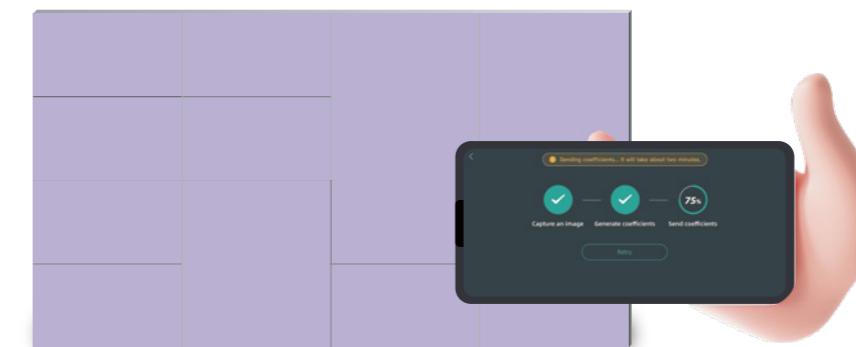
5 Seconds: Screen Connection via Photo Capture

With NovaStar's self-developed algorithm, which could support offline recognition, screen connecting within 5s, stable and efficient.



Eliminates the Bright & Darkness Lines Full-screen Accurate Calibration

Don't need professional camera, just photo capture by your phone, eliminates the lines automatically completes the full-screen accurate calibration, and the efficiency is significantly improved.



Full Operation and Maintenance Full Angle Monitoring

OPS and Monitoring, Anytime and Anywhere

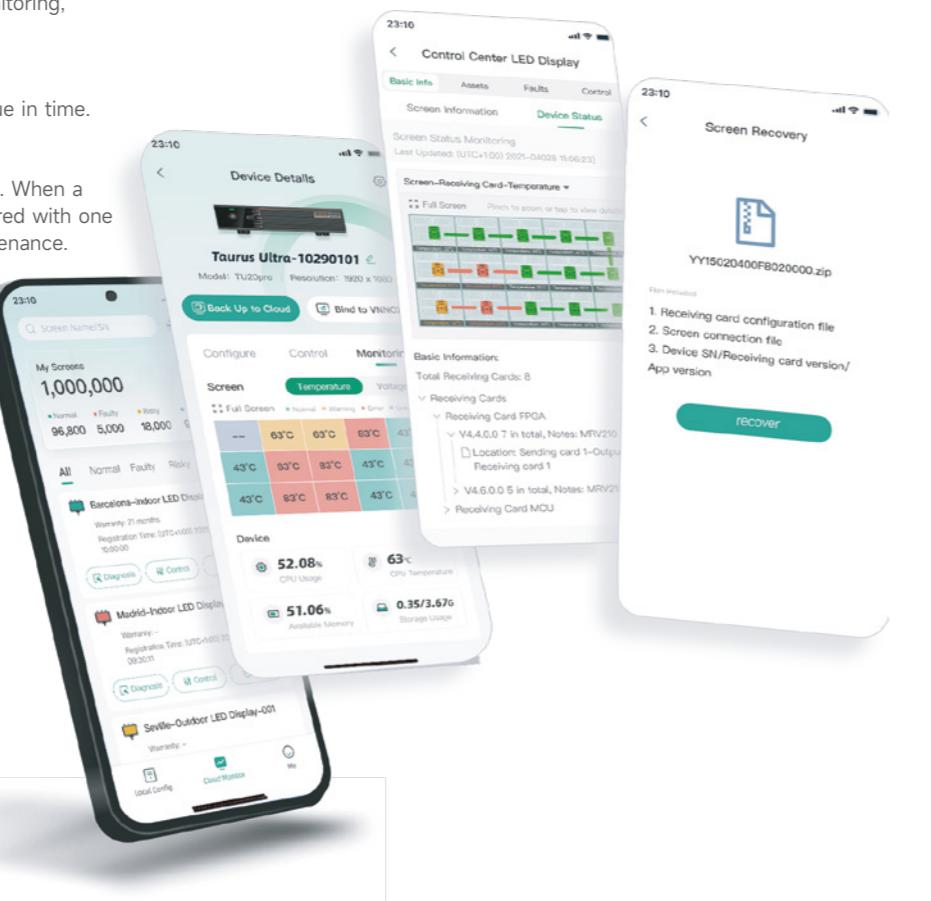
Screen operating status 7x24 hours real-time monitoring, pre-warning of the potential risk.

Troubleshooting, Faster & Accurate

Provide fault alarms, diagnosis, and locate the issue in time.

Cloud backup, One-click Recovery

The configuration files are backed up to the cloud. When a fault occurs, the configuration files can be recovered with one click, improving the efficiency of after-sales maintenance.

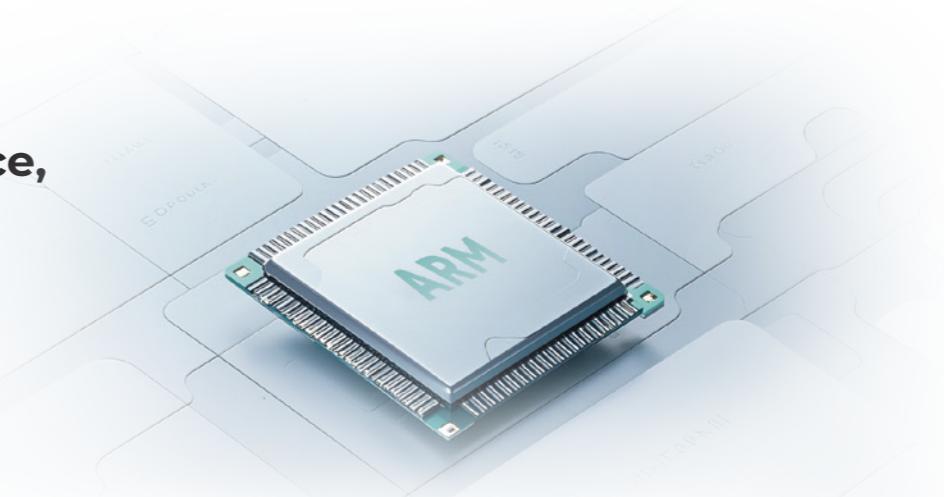


High-end Hardware Hardcore Performance

Powerful performance, Stable and Smooth

Built in octa-core 64-bit CPU and 4*A73+4*A53 ARM processor, maximum dominant frequency 2.2GHz.

8GB large RAM, 128GB massive storage, paired with Android 13 system, DBDM Wi-Fi 6 — ensuring long-term stable system operation.



Feature-rich, Comprehensive, and Flexible

Abundant input, output, and control ports. It supports various peripherals to meet the needs of different scenarios such as conferences, advertising media, and exhibition halls.



Practical Functions Applicable to Various scenarios



Conference Room



Enterprise Exhibition Hall



Report Hall



Brand Store



Shopping Mall



Advertising Media

Specifications

Product Model	TU15 Pro	TU20 Pro	TU4K Pro
Dimensions	211.7mm×185.0mm×50.6mm	211.7mm×185.0mm×50.6mm	445.0mm×383.0mm×49.9mm
Input Voltage	100-240V~, 50/60Hz, 3A Max	100-240V~, 50/60Hz, 3A Max	100-240V~, 50/60Hz, 2.5A Max
Standby Power Consumption	Overall power consumption≤0.5W	Overall power consumption≤0.5W	Overall power consumption≤0.5W
Loading Capacity	2.6 Million	3.9 Million	13 Million
Max. Width&Height	Max. Width 4096 pixels; Max. Height 1920 pixels	Max. Width 4096 pixels; Max. Height 1920 pixels	Max. Width 16384 pixels; Max. Height 8192 pixels
Android	Android 11	Android 11	Android 13
Wi-Fi	Wi-Fi6 (AP); Wi-Fi5 (Station)	Wi-Fi6 (AP); Wi-Fi5 (Station)	Wi-Fi6 (AP); Wi-Fi5 (Station)
Memory Space	4GB/32GB	4GB/32GB	8GB/128GB
Input Ports	2×HDMI1.3; 3×USB2.0	2×HDMI1.3; 3×USB2.0	2×HDMI2.0; 1×HDMI1.3; 2×USB2.0; 1×USB3.0; 12G-SDI(IN-LOOP)x1
Output Ports	4×RJ45; 1×HDMI1.3; 1×3.5mm Audio Output; 1×SPDIF	6×RJ45; 1×HDMI1.3; 1×3.5mm Audio Output; 1×SPDIF	20×RJ45; 2x10G OPT; 1×HDMI1.3; 1×3.5mm Audio Output; 1×SPDIF; 1x Phoenix Contact Audio Output
Control Ports	1×RJ45; 1×RS232; 1×Sensor	1×RJ45; 1×RS232; 1×Sensor	1×RJ45; 1×RS232; 2×Sensor; GENLOCK(IN-LOOP)x1
Intelligent Playback Control	Remote, APP, USB Drive	Remote, APP, USB Drive	Remote, APP, USB Drive
Wireless Mirroring	Support Type-C/ wireless USB adaptor, Support Windows / iOS / Android multiple platform mirroring	Support Type-C/ wireless USB adaptor, Support Windows / iOS / Android multiple platform mirroring	Support Type-C/ wireless USB adaptor, Support Windows / iOS / Android multiple platform mirroring
Whiteboard	Support (combined with infrared frame)	Support (combined with infrared frame)	Support (combined with infrared frame)
Intelligent Voice Control	Support	Support	Support
Free Scaling	Support	Support	Support
Effect Adjusting	Support (Standard, Soft, Theater, Meeting)	Support (Standard, Soft, Theater, Meeting)	Support (Standard, Meeting, Vivid, Skin)
One-click Eye Protection	Support	Support	Support
Launcher Customization	Support	Support	Support
Boot Animation Customization	Support	Support	Support

MBOX SERIES

MINI LED CONTROL PC SOLUTION

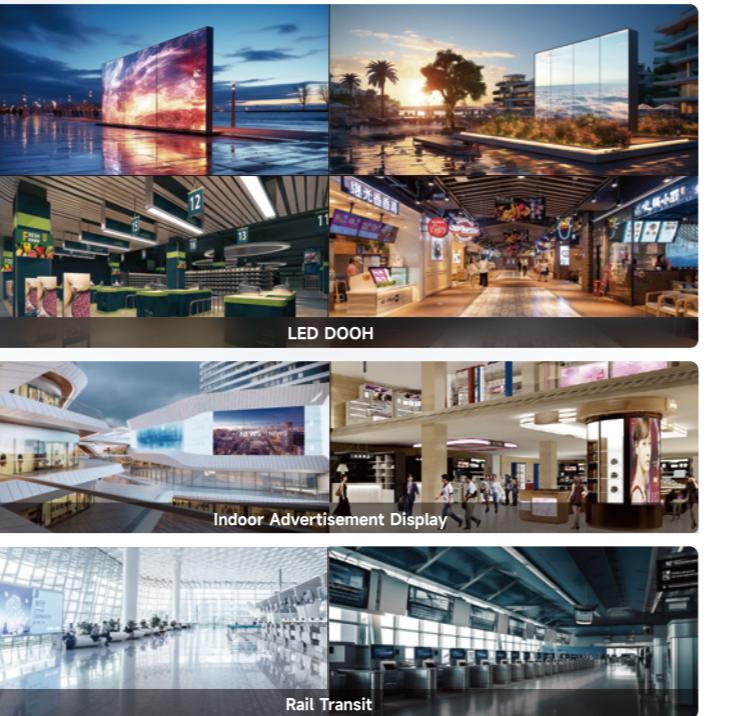
Outstanding Performance
Unlocking New Horizons





MBOX600 Pro

developed by NovaStar, is an LED display controller that integrates the functions of an industrial PC and a sending card. It supports up to 2.6 million pixels and can be widely used in unattended scenarios like outdoor fixed screens. This controller can monitor and manage the SNMP system, offering professional system monitoring and operation management services for specialized advertising media display users. Managed via a web application, it provides users with versatile control and ease of use in every scenario. This solution boasts comprehensive scalability, delivering a robust server to unlock the system's full potential. It is designed to meet users' diverse secondary development and innovation needs.



Innovative Integration Stable and Reliable

Integrated Design: Industrial PC + Sending Card

Reduced system wiring for simpler setup and enhanced reliability.



Complex Environment Handle with Ease

Industrial-grade cooling ensures stable operation even in extreme conditions.



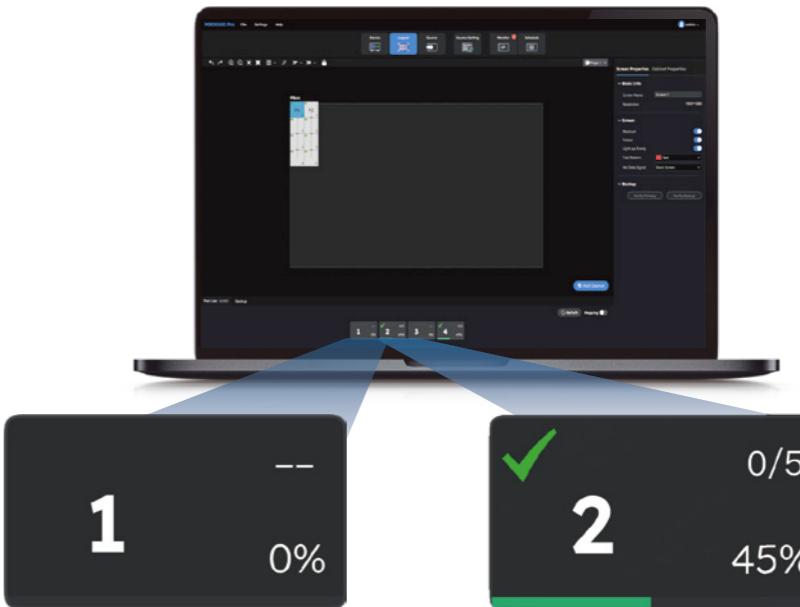
Flagship Configuration Powerful Performance



Portable Design Efficient Configuration

Free Wiring

All-new hardware architecture, no more capacity waste from leaving blank. Free from rectangle limitation, helping maximize the loading capacity of controllers.



Intuitive Web Interface Software Free from System Constraints

- Supports Windows and Linux System.



- Web-based interface software for easier and more convenient screen configuration. (e.g., remote network configuration, sending configuration files and screen connection diagrams)



Feature-rich Flexible Application

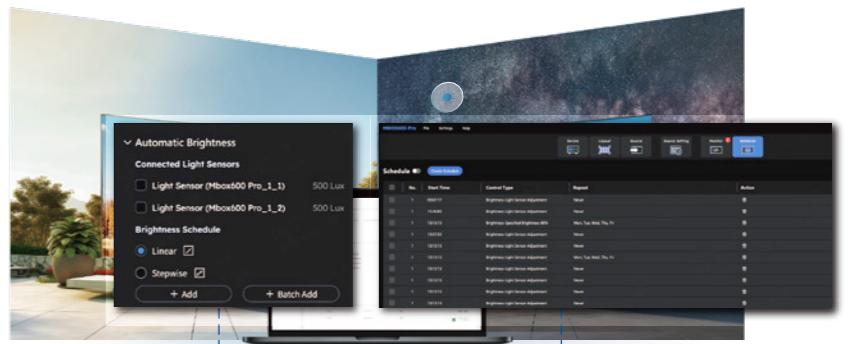
Synchronous/Asynchronous Dual Modes

Supports HDMI 1.3 synchronous source input, with one-click switching between synchronous and asynchronous sources.



Rich Peripherals

Intelligently senses ambient light and receiving card temperature to automatically adjust LED display brightness.



【Temperature Monitoring】 Regulation Strategy

Automatic protection to prevent the display temperature from getting too high.

【Specific Brightness】 , 【Ambient Brightness】 Regulation Strategy

Simple, flexible setup, suitable for actual environment.

Flexible Scaling Supported

Pixel level scaling, up to 2.6 million pixels;
Width range: 64-4096; Height range: 64-1920.



Dual-Screen Asynchronous Display

Supports one HDMI 1.3 output, which can be used for LED display monitoring or display a different image from the LED display.

Full Operation and Maintenance Worry-free Stability

Cloud Service Intelligent Control

- **Monitoring and Maintenance, Anytime and Anywhere**

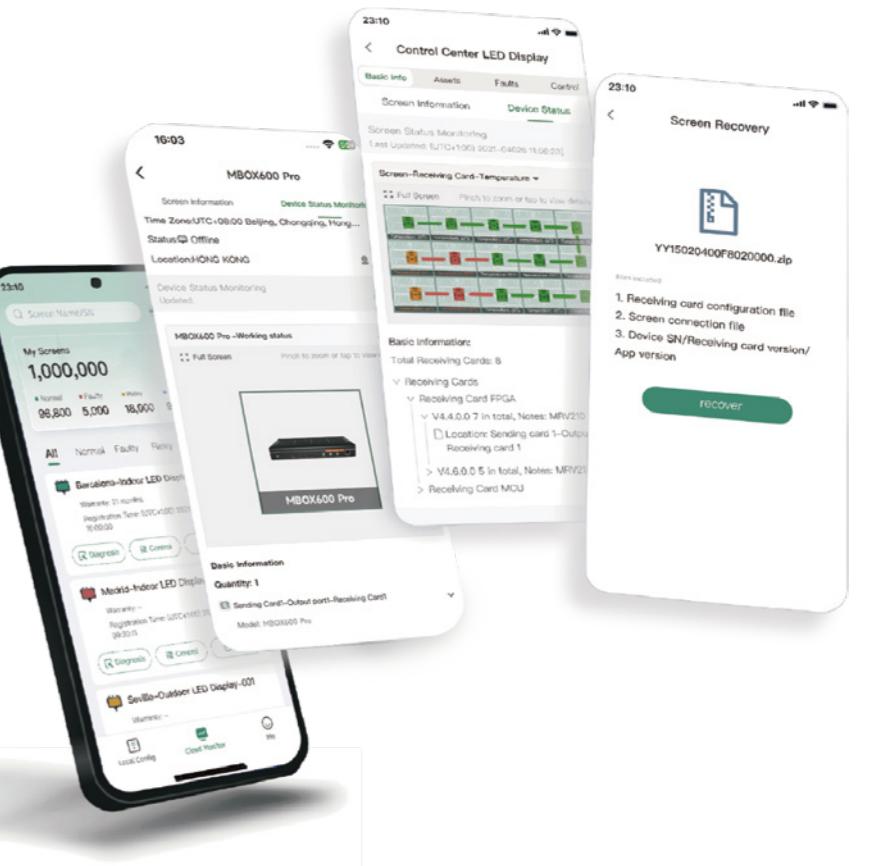
Real-time monitoring of screen operation status, pre-warning of the potential risk.

- **Troubleshooting, Faster and Accurate**

Promptly provides fault alarms, diagnosis, and pinpointing, enabling quicker issue resolution.

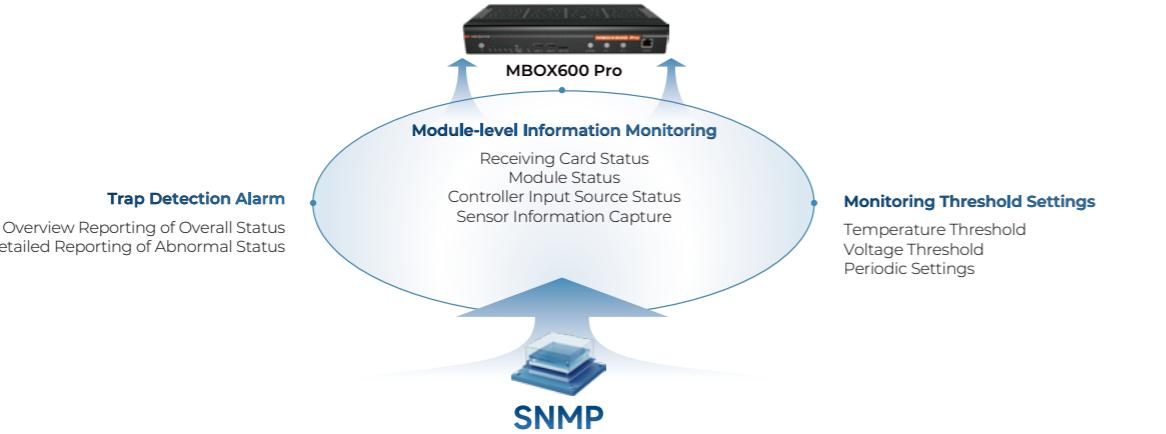
- **Cloud Backup, One-click Recovery**

The configuration files are backed up to the cloud, allowing for one-click recovery in case of a fault. This greatly improves the efficiency of after-sales maintenance.



SNMP System Monitoring

Supports SNMP V2, V3, reducing management costs and improving management efficiency.



Remote Monitoring, Precise Location

Real-time display status acquisition over LAN via web interface, visualized operations and maintenance, precise error location.



Specifications

Product Model	MBOX600 Pro
Size	319.0mm×134.5mm×44.4mm
Input Voltage	DC 12V 7A
Stand-by Power Consumption	≈1.6w
Loading Capacity	2.6 Million
Maximum Width & Height	Maximum Width: 4096 Maximum Height: 1920
OS	Windows: Windows 10 IoT Enterprise Linux: ubuntu20.04
Wi-Fi	WiFi(Station) , WiFi 5, 2.4G/5G
CPU	Intel® Processor N97
Storage	8G/256G
Input Ports	1 × HDMI 1.3 2 × USB 2.0 2 × USB 3.0
Output Ports	4 × RJ45 1 × HDMI 1.3 1 × 3.5mm Audio
Control Ports	2 × Gigabit Ethernet Port 1 × RS232 2 × Sensor Port
Free Scaling	Support
SNMP	Support
Remote Control	Support

LCB SERIES

LCD/LED MULTIMEDIA SOLUTION

Exquisite Visuals
Intelligent Presentations



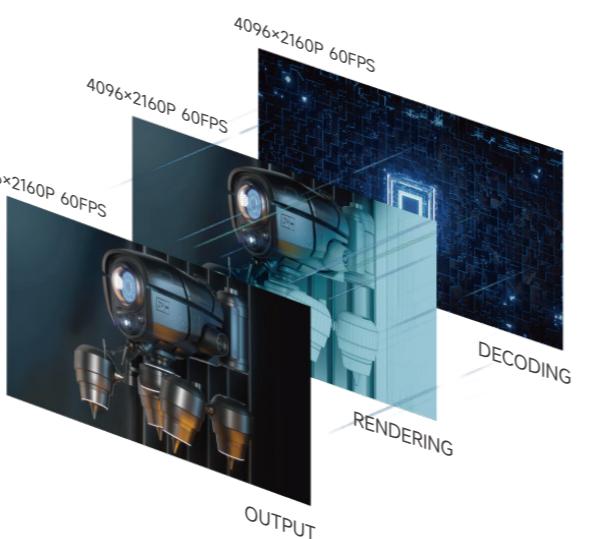
More Clear Real 4K Vision

Decoding → Rendering → Playback Output

Full-link 4K@60Hz

Revealing every fine detail

Showcasing the beauty of intricacy



More Flexible HDMI Dual-mode Output

HDMI 2.0

Adaptive and custom dual-mode output

Various display media

Flexible matching options

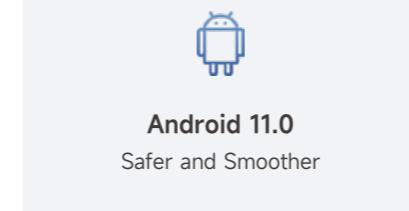


More Convenient USB Remote Control

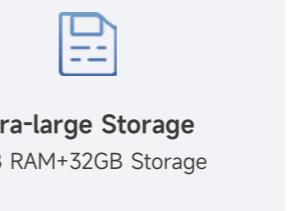
By connecting the controller via USB interface
users can remotely control screen brightness, power, and switches
No computer required, more convenient to use



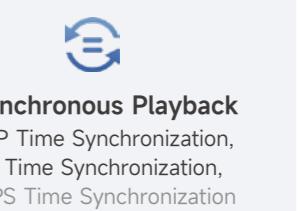
More Practical Functions



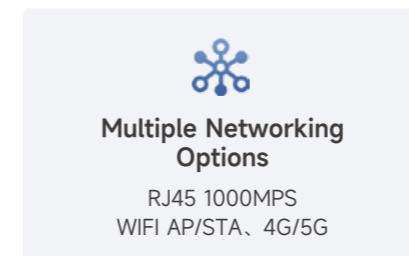
Android 11.0
Safer and Smoother



Ultra-large Storage
2GB RAM+32GB Storage



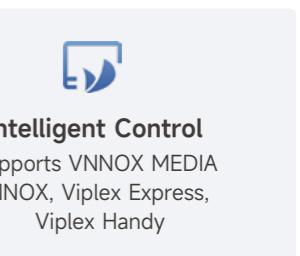
Synchronous Playback
NTP Time Synchronization,
RF Time Synchronization,
GPS Time Synchronization



Multiple Networking Options
RJ45 1000MPS
WIFI AP/STA、4G/5G



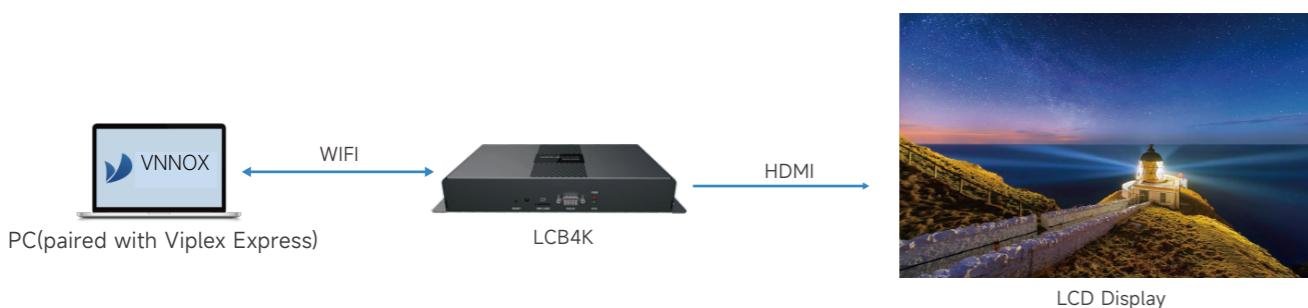
Maximum Loading Capacity
Video Resolution up to 4096



Intelligent Control
Supports VNNOX MEDIA
VNNOX, Viplex Express,
Viplex Handy

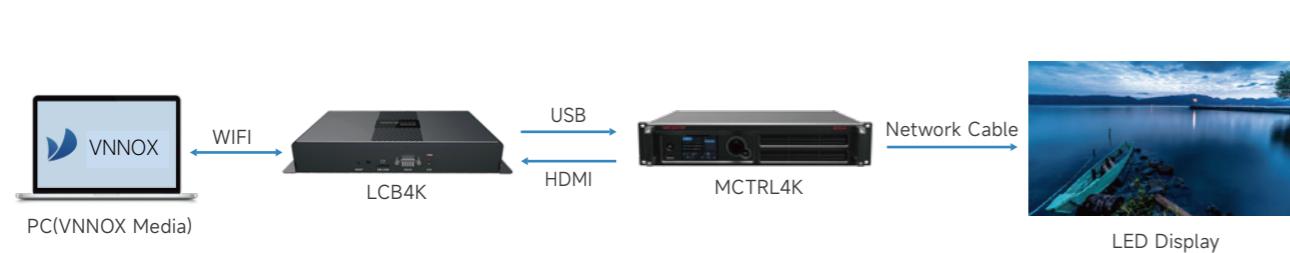
Application Scenarios

Typical Scenario for LCD Advertising Displays



Typical Scenario for LED Fixed Installations

LCB4K Multimedia Player
More Clear, More Flexible, More Convenient



Specifications

Product Model		LCB2K	LCB4K
Basic Info	Size	123.0mm×89.0mm×29.5mm	274.3mm×139.0mm×40.0mm
	Net Weight	255.4g	1.1kg
	Input Voltage	DC 12V, 2A	100-240V~, 50/60Hz, 0.6A
	Stand-by Power Consumption	NA	NA
Loading Capacity	Max Loading Capacity	Max 1920×1080@60HZ	Max 4096×2160@60HZ
	Max Width/Max High	4096(Max Width),3840(Max High)	4096(Max Width),4096(Max High)
Hardware Configuration	Android	11	11
	CPU	4 Core A55 Processor/1.3GHz	4 Core A55 Processor/1.8GHz
	Storage	1GB/16GB	2GB/32GB
	WIFI	2.4GHZ, Switchable AP&STA	2.4GHZ, Switchable AP&STA
	4G Module	Support(Optional)	Support(Optional)
	Input Port	USB 3.0×1	USB 3.0×1 USB 2.0×1 RS232×1
	Output Port	1×HDMI1.4 1×Audio	1×HDMI2.0 1×Audio
	Control Port	1×USB3.0 (Type A) 1×USB (Type C) 1×RJ45 100MPS	1×USB3.0 (Type A) 1×USB2.0 (Type A) 1×USB (Type B) 1×RJ45 100MPS
	Free Scaling	Support	Support
Display Effect	Number of Layers	1×4K, 2×1080P, 4×720P, 4×480P or 6×360P	2×4K, 6×1080P, 10×720P or 20×360P
	Effect Adjustment	NA	Brightness, Color temperature (Support LED only)
	Synchronized Broadcast	NTP/LORA(Optional)/GPS(Optional)	NTP/LORA(Optional)/GPS(Optional)
	Viplex Express	Support	Support
Platform/NovaStar Software	Viplex Handy	Support	Support
	VNNOX Media	Support	Support
	VNNOX Care	Support	Support
	Certifications	CE, WPC	CE, WPC

TCC SERIES

FULL-COLOR ASYNCHRONOUS CONTROLLER SOLUTION

The Industry-first
Full-color Asynchronous Controller
with 16 HUB75E Connectors



TCC160

TCC160 Full-color Asynchronous Controller

It adopts NovaStar's brand-new asynchronous control system, integrating both sending and receiving capabilities. It features 16×HUB75E connectors, supports cascading with receiving card, and can handle ultra-long screen (maximum width of 8192 pixels). Equipped with industrial-grade SOC chips, and the network design of AP and STA dual modes, the stable operation of the system is guaranteed.

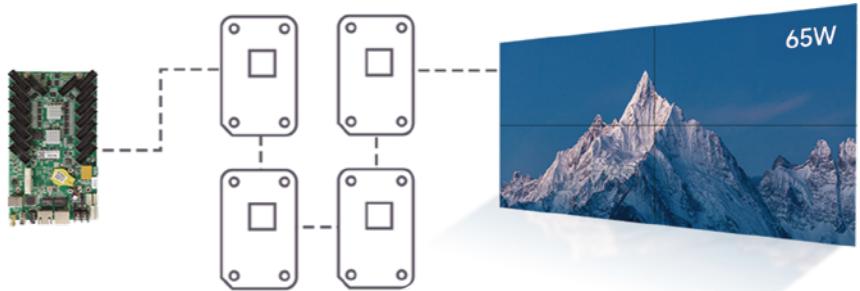
The product features true 4K video hardware decoding, exceptional frame synchronization, and precise sync even during extended playback. It also supports VNNOX Media and VNNOX Care, enabling easy cross-regional cluster management of screens. With just one single card, various small-scale scenarios can be effortlessly handled.



Upgraded Specifications Enhanced Loading Capacity

Ultra-large Loading Capacity

Equipped with 16×HUB75E connectors, the maximum loading capacity of per TCC160 is 512×512 (260,000) pixels. The maximum load can reach 650,000 points when it is cascaded with the receiving card.



Ultra-long Display

Maximum width for ultra-long screen -- 8192 pixels, meeting various ultra-long screen application scenarios.



Industrial-grade Design Stable Operation

Industrial-grade SOC Chips

The equipment can operate normally under extremely cold -40°C and extremely hot 80°C.



5V-12V

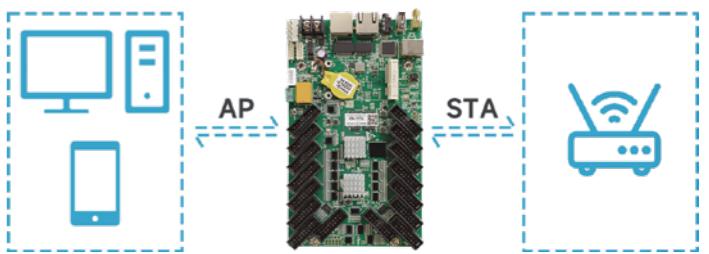
Industrial-grade design of pressure and interference resistance.



Technology Empowered Performance Revolutionized

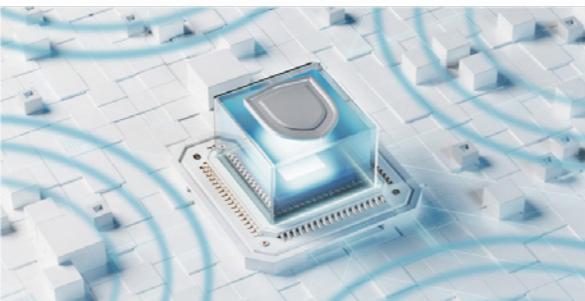
AP+STA: Always Online

Dual mode design, supporting both WiFi AP and WiFi STA to ensure the stability of device connection to the greatest extent.



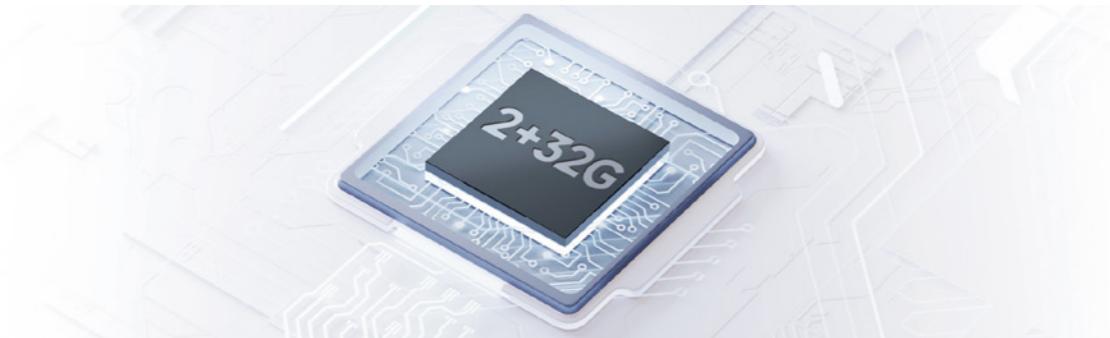
4K Video Hardware Decoding

It supports 4K video hardware decoding with no delays, delivering clear image quality and enhanced advertising impact.



2G+32G Ultra-large Memory

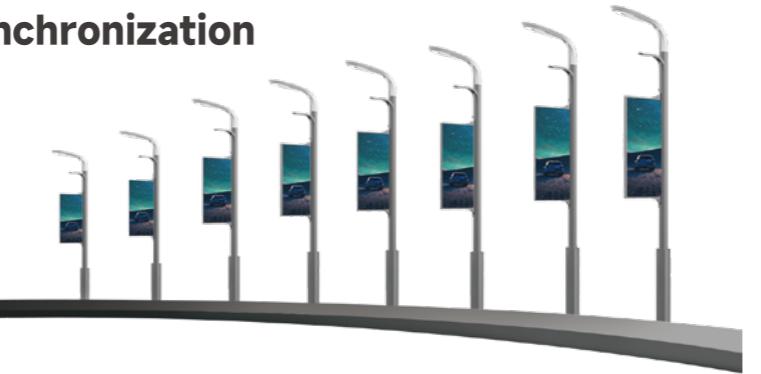
The 4K video can be played smoothly, without being stuck, and many types of media materials can be stored in large capacity.



Industry-leading Frame Synchronization

The decoder automatically calibrates the internal clock, maintaining frame-level synchronization even during extended operation.

Pixel-level synchronization accuracy, perform excellent even in smartphone cameras



Flexible Control Everything in Charge

Multi-Functional USB Drive: Convenient Application

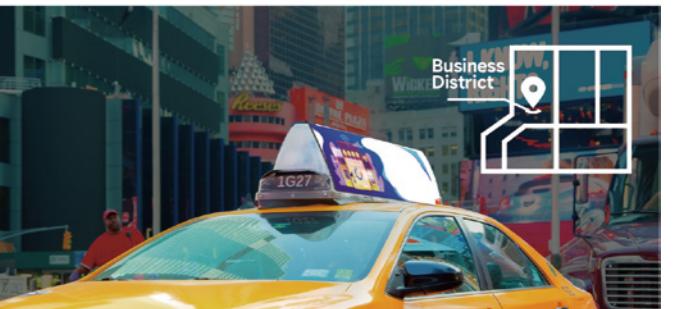
Supports USB Playback and Upgrade



Precise Targeting Accurate Delivery

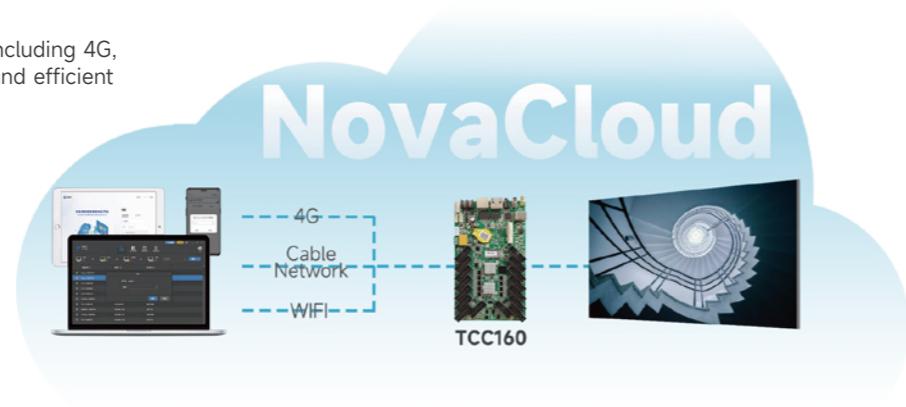
A single card can support a vehicle-mounted screen, enabling real-time vehicle location monitoring and route playback.

It supports targeted ad placement by region, matching the demographic attributes of the area to enhance targeting accuracy.



Flexible Networking Fast and Efficient

It supports multiple networking methods including 4G, Wi-Fi, and Ethernet, ensuring convenient and efficient setup and maintenance.



Remote Control OTA Upgrades

Remote firmware updating, improving screen management efficiency.

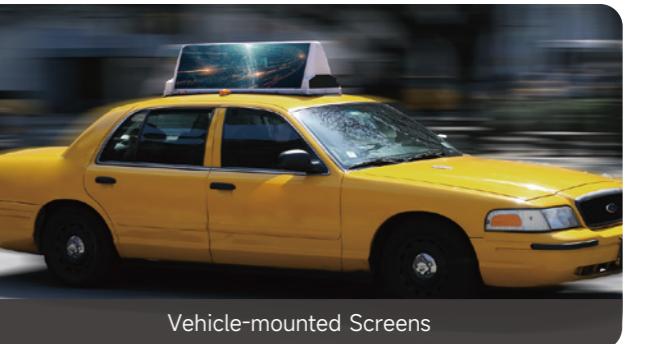


Application Scenarios

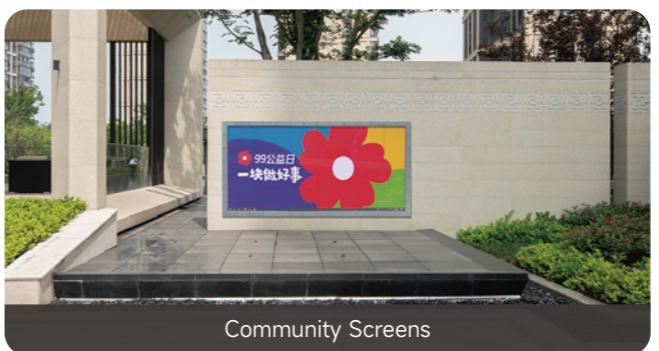
Cross-region cluster management of screens is easily achieved. Various small-scale scenarios can be effortlessly handled with one card.



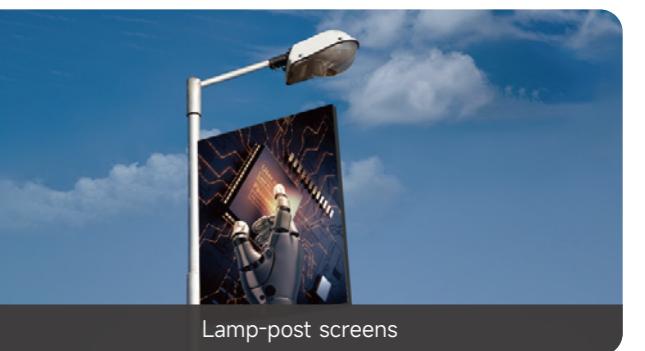
Storefront Screens



Vehicle-mounted Screens

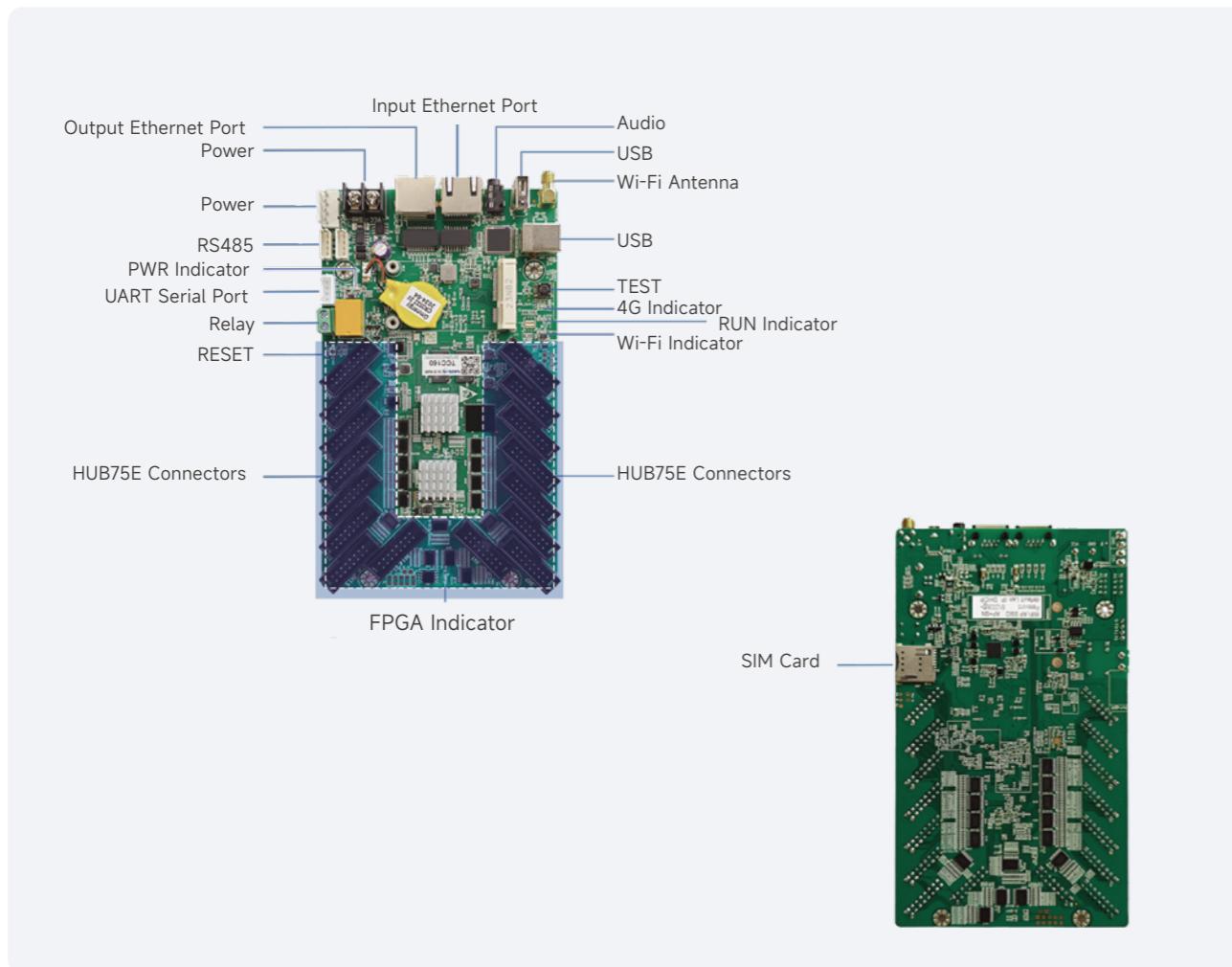


Community Screens



Lamp-post screens

Appearance



Specifications

Product Module	TCC160
Loading Capacity	A single card unit supports 260,000 pixels; Cascading mode supports 650,000 pixels
Loading Capacity	2GB + 32GB
Operating Temperature	-40°C-80°C
Input Voltage	5V-12V
Maximum Power Consumption	12W
Maximum Width & Height	Maximum width for ultra-long screen: 8192 pixels Maximum height for ultra-long screen: 2560 pixels
Storage Expansion by USB Drive	Up to 128G
Storage Expansion by USB Drive	Supports H.265, AVS2, H.264, H.263, VP8, MPEG4, MPEG2 MP, MPEG1 MP, VC1 SP, xvid, Sorenson, AVS/AVS+, JPEG, and other common video encoding formats Supports playback of 1 stream of 4K video, 3 streams of 1080p video, 8 streams of 720p video, 10 streams of 480p video, or 10 streams of 360p video
Audio	1x3.5mm Audio Output
Cable Network	100M Ethernet Port
Wi-Fi	Standard 2.4 GHz Wi-Fi, Wi-Fi AP and Wi-Fi STA can be turned on at the same time.
4G Module	Optional
HUB75E Connectors	16 connectors
Sensor	2 connectors
Relay	2-Pin relay control switch for screen remote control
Intelligent Playback Control	Support
Cloud Access	Support
Secondary Development	SDK interface



VNNOX Care

NovaCloud is a professional and operational cloud-based management platform for LED service providers, which is divided into VNNOX Care and VNNOX Media.

VNNOX Media is a professional content publish platform, providing content management, device management, release management and data report statistics and other functions, to help customers integrate and optimize the digital whole process from content creation, release and device management, to achieve intelligent LED screen operation, enhance the value of the LED screen.

About VNNOX Care, whether your business is based on LED pre-sales plan, construction deployment, LED screen data management, status monitoring or after-sales maintenance, systematic management and operation and maintenance means are essential;

The simple and flexible management mode of VNNOX Care allows you to easily have a set of your own operation and maintenance management system, effectively improve the efficiency of enterprise operation and maintenance, reduce service costs, and create value for enterprises through service.

**Start your NovaCloud
productivity journey now!**

**The world's largest LED cloud service
Comprehensively enhance the LED value**

One-Stop LED cloud service platform



Pre-sale

Installation

After-sale

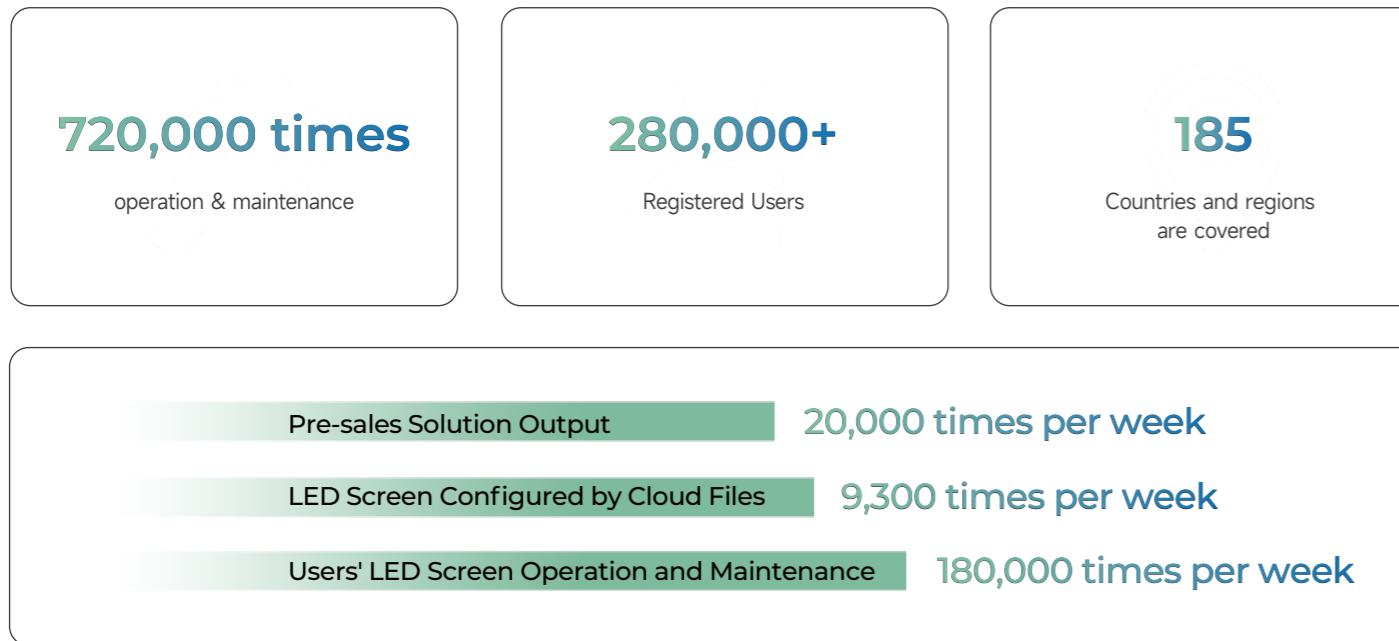
AI Assistant

Open Platform

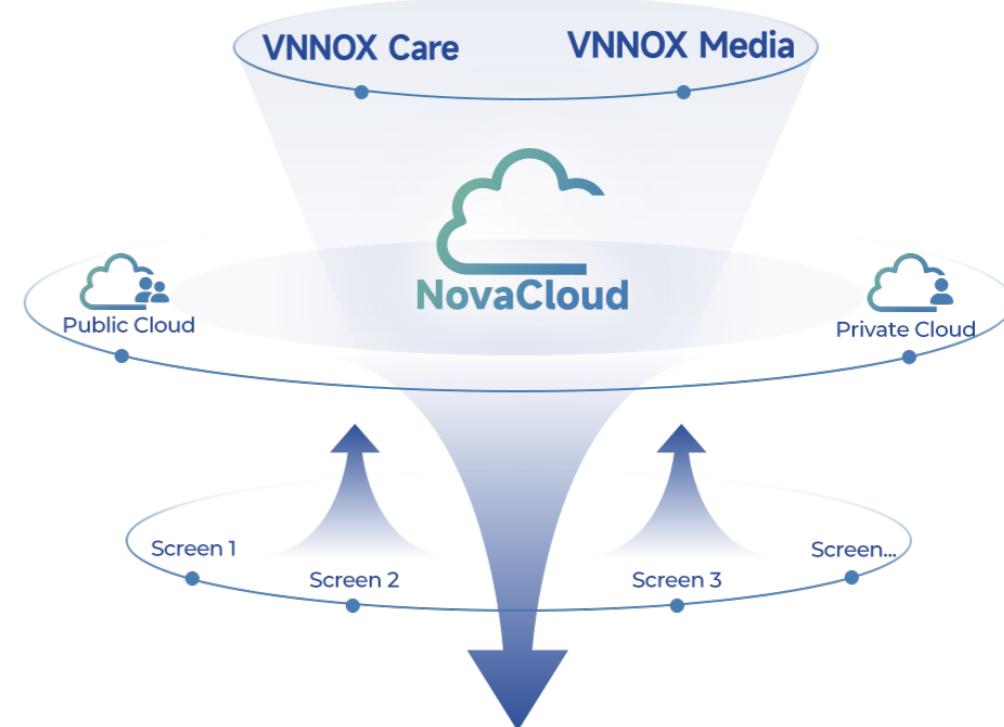
NovaCloud has successfully served over

1.8 MILLION LED DISPLAYS WORLDWIDE

The world's largest LED screen cloud service provider



NovaCloud product architecture

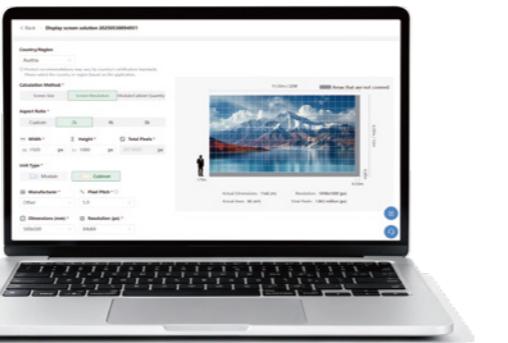


Pre-sale

LED Screen Pre-sale Project Solution Service

1-Second Output for Professional Display Solutions

—Accessible to Everyone!



Enter the basic requirements and complete the solution configuration within 1s

- Real-time screen layout preview
- Full-link solution integration with smart solution tagging
- 10 new advanced configuration options to handle complex, specialized needs
- More accurate device recommendations
- Greater flexibility for secondary edits and deeper scenario adaptation
- One-Click Solution Packaging

For now, more than 20,000 industry users using NovaCloud LED screen solution production services a week, lower the pre-sales work of human, sharply reduce work difficulty.

Installation

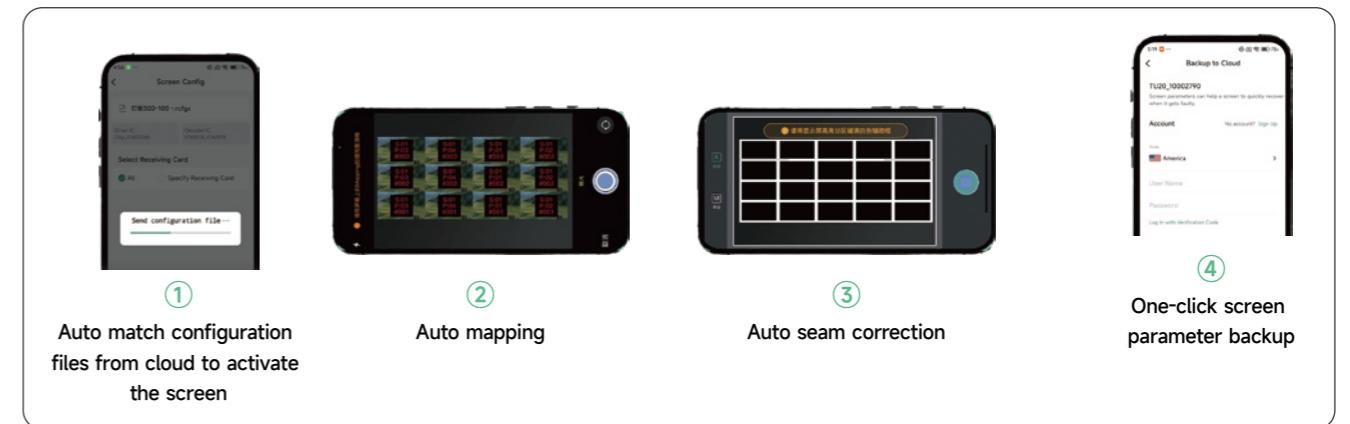
LED screen Installation service

1 mobile phone, 10 minutes, can quickly complete configuration.

Complete complex LED screen configuration within 10 minutes without professional background

Relying on the high-performance edge computing capability of NovaCloud intelligent control equipment and the massive display configuration resources of cloud services, through the wireless connection of mobile phones, you can automatically complete the configuration file download, receiving card automaticay update and active screen, cabinet routing, seam correction.

The whole process is intelligent, automated and standardized, greatly improving the construction efficiency and reducing the time and communication cost





LED screen intelligent Operation and Maintenance services

The entire series of display and controller are maintained and operated on one platform

The real-time data of the screen is calculated online and presented in a structured manner through cloud services, accurate troubleshooting, cloud full-screen backup, active monitoring and 13 remote operation abilities to ensure the reliable operation of the screen for a long period, help clients to enhance the digital capabilities to achieve cost reduction, efficiency improvement, and maximize the application value of the screen.



Real-Time Monitoring



One-Click Fault Diagnosis



10 Remote Operation Abilities



Display Assets Management



AI Assistant

Professional AI Intelligent Assistant in the LED Industry

- Obtain product specifications, operation manuals, and other product documents
- Obtain controller and receiver card firmware as well as software installation packages
- Chat with the AI assistant for interactive Q&A on product usage
- Technical support for general troubleshooting
- Access general knowledge Q&A related to the LED industry



Open Platform:

The Foundation of Novastar Cloud Open Ecosystem It provides users with the APIs:

- Comprehensive content publishing
- Device management, control, and monitoring capabilities
- Supports API name search
- Offers online key management
- Provides API online debugging



Open Platform

The platform integrates rich resources like API documents and online debugging tools. Via this platform, users can quickly operate and call Novastar Cloud services with minimal coding to realize LED display information release. Rich API resources enable in-depth system integration, enhancing existing IT system efficiency and driving greater business value.

NOVASTAR