





User's Manual

Video Controller NovaPro HD

Rev1.4.2 NS160100032

Statement

Welcome to use the product from Xi' an NovaStar Tech Co., Ltd. (hereinafter referred to as "NovaStar"). It is our great pleasure to offer this manual to help you understand and use the product. We strive for precision and reliability during the compilation of this manual, and the content of this manual are subject to change without notice. If you have any problem in use or you have any suggestion, please feel free to contact us according to the contact information provided in this manual. We will do our utmost to satisfy your needs. We would like to express our sincere thanks to your suggestions and make assessment for adoption as soon as possible.

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1 Safety Statement

To avoid potential hazards, please use this equipment according to the regulations. In case of damages, non-professionals are not allowed to disassemble it for maintenance without permission. Please contact the after-sales department of the company.

A	High voltage danger: The operating voltage of this product is 100-250V
	AC.
\bigwedge	Grounding: This product is grounded through grounding cord of power
	supply. Please keep the grounding conductor is well grounded.
	Electromagnetic interference: Keep this product far away from magnets,
	motors and transformers.
	Moisture proof: Keep the equipment in a dry and clean environment. In
	case of liquid immersion, please pull the power plug immediately.
	Keep away from flammable and explosive hazardous substance.
	Prevent liquids or metal fragments from being immersed into the product
	in order to avoid safety accidents.

2 Overview

NovaPro HD is a professional LED display controller. Besides the function of display control, it also features in powerful front-end processing. It has integrated various professional interfaces. With excellent image quality and free image control, NovaPro HD has greatly satisfied the requirements of display industry.

Product features:

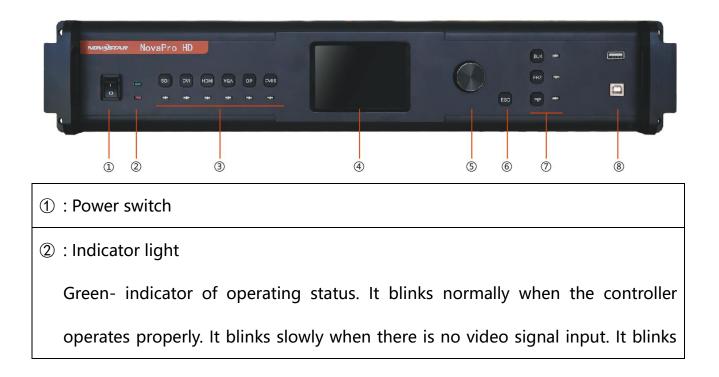
- NovaPro HD has complete input interfaces including CVBS, VGA, SDI, DVI, HDMI and DP. These interfaces support input resolution up to 1080p@60Hz, highest pixel clock up to 165 MHz and output bandwidth up to 4 GBit.
- 2) NovaPro HD has adopted 12 Bit digital processing internally. With advanced de-interlacing motion self-adaptive processing technology adopted, images are clear and fine. Each input can be fully configured with contrast, saturation, hue, color temperature. It allows for switching between point-to-point display and point-by-point scaling of input image according to display resolution.
- 3) NovaPro HD doesn' t need computer software for system configuration. System configuration can be completed only through one knob and one button. All operations can be done only by several steps. That's what we called "Touch Track".
- 4) NovaPro HD supports multiple units splicing.
- 5) NovaPro HD has integrated DMX512 and GenLock input and loop interfaces. Professional control and synchronization have been provided. With the design of

dual power redundancy backup, the system is stable and reliable. Optical fiber output has guaranteed the stability of long-distance data transmission.

- 6) In addition to the operations of the controller and LCT client, you can also configure the system with browsers on your PC or PAD, namely, Web interface operation which is able to preview and assist with system settings in real time and confirm current working status of the system.
- 7) NovaPro HD is the flagship product of NovaStar new generation controllers. Being powerful in image processing, professional in image control and friendly in user-interface, NovaPro HD has brought unprecedented ease and pleasure in LED display control.

3 Appearance

3.1 Front Panel



like breathing when there are Ethernet ports of this unit in hot backup state.

Red- Power indicator

③: Option buttons of six input sources and below is corresponding indicator lights. Short press a button to set it as the input source of main screen while long press to set as the source of PIP. Result of the operation can be viewed on operation screen during setting.

④: Operation screen (Please see details in the subsequent Chapter: Main Interface).

⑤: Knob: Enter by pressing the knob and select or adjust by turning the knob.

(6): ESC: Exit current operation or option.

 BLK: LED Display is blank screen. Indicator light is blue by default after power on and it turns green when BLK is enabled;

FRZ: Images on LED Display are frozen. Indicator light is blue by default after

power on and it turns green when enabled;

PIP: Display PIP. Indicator light is blue by default after power on and it turns green when enabled;

⑧: Type A female interface is USB interface to connect U disk to import configuration file or update programs.

Type B female interface is USB control interface to connect PC for communication.

3.2 Rear Panel



Note: In order to improve user' s experience, layout of the interfaces may be adjusted a little. The picture is only for reference.

Inputs			
Audio	Audio Input		
DP	DP Input		
HDMI	HDMI Input		
DVI	DVI Input		
VGA	VGA Input		
CVBS	PAL/NTSC TV Composite Video Inputs		
3G-SDI IN	3G-SDI Input		
Genlock IN	Synchronizing signal to guarantee the images on display		
Geniock IN	is synchronous with external Genlock source.		
Outputs			
3G-SDI LOOP	3G-SDI Loop out		
GenLock LOOP	Genlock Loop out		

DVI LOOP	DVI Loop out		
Monitor -DVI	Monitoring Interface		
Monitor -HDMI			
LED Out 1, 2, 3, 4	4-Channel Ethernet Outputs		
OPT Output 1, 2, 3, 4	4-Channel Optical Fiber Outputs		
Control Interface			
ETHERNET	Ethernet Control (connecting PC for communication or		
	accessing Network)		
	IN: connecting PC for communication or cascade input;		
USB Control	connecting USB OUT of last NovaPro HD		
	OUT: cascade output, Cascading USB IN of next NovaPro		
	HD		
	IN: connecting all consoles that support DMX512		
DMX Control	interface protocol.		
	LOOP: DMX512 signal Loop output		
Power			
AC 100-250V~50/60HZ	AC Power Interface		

4 Signal Connection

Signal Connection

Connect the required hardware devices referring to the interface descriptions in

previous chapters.

Note: Please turn OFF POWER before signal connection.

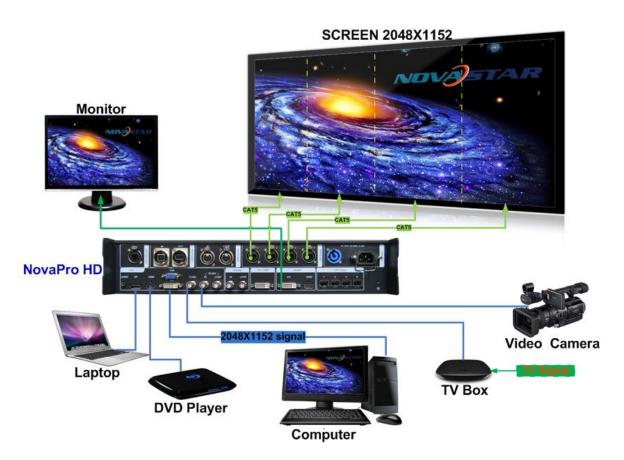


Fig. 4-1 Signal Connection

Multiple Units Connection Sketch

Video Source Connection

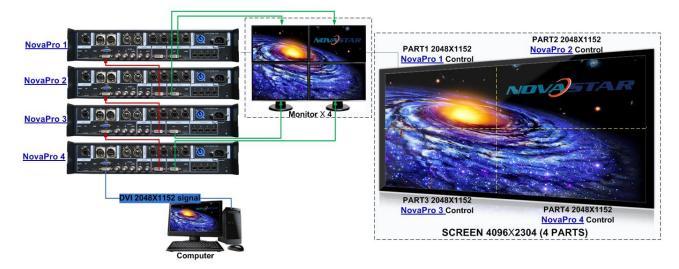


Fig. 4-2 Oversized Video Source Loading Scheme (4K)

Cascade Control Signal Connection



Fig. 4-3 Cascade Control Signal Connection

5 Description of Operation Modes

NovaPro HD is not only powerful in functions but also easy to use. It supports three

operating modes for users to choose in different occasions.

Mode 1: Machine operation. All operations can be completed by a knob and a button

on NovaPro HD without PC.

Mode 2: Web operation. Suitable for the situation when NovaPro HD and control

computer are in the same LAN. Open up a browser on control computer and enter the IP of NovaPro HD to log in control page.

Mode 3: NovaLCT client operation. Connect NovaPro HD to control computer and all configurations can be completed on NovaLCT-Mars client. Then send to NovaPro HD. **Note**: Interlace operation of machine, LCT and Web is not allowed.

Please refer to the following chapter for detailed operation steps.

6 Machine Operation

LED display can be started with moderate brightness and used normally through five simple steps.

Menus of Display Control, Advanced Settings, Communication Settings and Language can help users to better control LED display.

6.1 Description of operation action

Knob: Press the knob to enter into menu and turn it to adjust values or select submenus. At this time, enter into the submenus or confirm adjusted values by pressing the knob.

[ESC] : Return key, exit from current menu or operation.

Option buttons of six input sources: Short press a button to set it as the input source of main screen while long press to set as the source of PIP.

Lock: simultaneously press the knob and ESC button for more than three seconds to lock the controller.

Unlocking: simultaneously press the knob and ESC button for more than three seconds to unlock the controller.

6.2 Main Interface

After starting the controller, the main interface of LCD display is as follows:

OVAPro	×	192.168.6.10		
INPUT	\mathbf{i}			
MAIN	DVI	1080P@60Hz		
PIP	VGA	1024×768@60Hz		
OUTPUT	. /			
Scree	en	1080P@60Hz		
Port		1 2 3 4		
STATUS				
Primary :0.0 80% ↓37℃ (10 5.0∨				
5.5	GEN			

First row: product model, local IP/ device name (custom)

INPUT:

Main screen, signal source, input source signal format.

PIP, signal source, input source signal format.

OUTPUT:

Output signal format of LED display.

LED Output, Currently it is Port2 output.

STATE:

Status bar, meanings of each icon are described as below:

Primary	It denotes that the controller is in primary control mode.
Backup	It denotes that the controller is in backup mode.

	Current brightness is 80%.		
	When the temperature of NovaPro HD exceeds threshold value (able		
<mark>∛</mark> 37℃	to be changed by users), the temperature value will turn red and		
	blinks.		
	When the voltage of NovaPro HD exceeds threshold value (able to be		
V 5.0V	changed by users), the voltage value will turn red and blinks.		
	Current effect is point-to-point display.		
N R A R	Scaling down mode		
К . Э. 2	Scaling up mode		
GEN	It denotes that there is Genlock synchronous signal input.		
DMX	It denotes that DMX channel signal is enabled.		
•	It is USB control currently.		
<u> </u>	It is Ethernet Port control currently.		
	Image Mosaic enabled		
A	Button lock icon, functions of the buttons and knob are locked when		
	this icon appears on the main interface.		
	It denotes that the controller is not locked		

6.3 Step 1: Input Settings

Set the resolution of input source signal. Resolution can be directly set and changed

through NovaPro HD for digital input modes: DVI, HDMI and DP. For other input modes, resolution can only be changed on input devices.

Input resolution can be set through two ways:

I: Preset Resolution

Choose a suitable resolution from the standard resolutions preset in the controller. If

there is no suitable resolution, please go to II: Custom Resolution



II: Custom Resolution

Set custom width, height, refresh rate. Then turn the knob to select "Apply" and press the knob to confirm and apply. If not confirmed, the custom resolution settings will be unavailable.

Input Settings	Custom ⊷w→ Width(H)	1900
🛂 Custom 🕨 🕨	Height(V)	960
	🕢 Refresh Rate	60Hz
	🗸 Apply	구 Return

6.4 Step 2: Screen Settings

Preconditions of screen settings:

1) Each Ethernet port must load the same number of cabinets (If the number of

cabinets is not integer multiples of the Ethernet ports, the remaining cabinets will be loaded by the last Ethernet port);

2) Regular screen, regular cabinets, each cabinet with the same size.

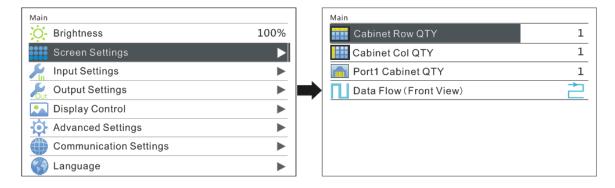
Operating steps of screen settings:

Step 1 Turn on the power of LED display. If the cabinets display normally, go to step 2.

If the cabinets display abnormally, it is required to load the cabinet file first and

save it to receiving card. Please see detailed operations in Advanced Settings.

Step 2 Enter into the submenu of "**Screen Settings**" submenu. The options are shown in the following figure:



- Step 3 Set Cabinet Row QTY and Cabinet Column QTY according to the actual situation of the screen.
- Step 4 Set Port1 Cabinet QTY. The device has some limitations on the cabinet quantity of network interfaces. For details, see precautions for screen setting a). The controller has certain limitations to the quantity of cabinet loaded by an Ethernet port. Please see details in Notes a) of Screen Settings.

Step 5 Set data flow of the screen and please see the Notes c), d), e) of screen

settings.

Main	
Cabinet Row QTY	1
Cabinet Col QTY	1
Port1 Cabinet QTY	1
Data Flow (Front View)	
之机的	
두 지 로	

Notes for screen settings:		
a) If the number of ports with loads is n	Example:	
($n \le 4$), the quantities of cabinets loaded by	If Port 1, Port 2, Port 3 have loads, cabinet	
each of the first n-1 ports must be equal (If	quantity of Port 1 and Port 2 must be equal and	
the quantity of cabinet loaded by each port	also be an integral multiple of the quantity of	
are different, please choose Advanced	cabinet row or column. As a result, set Port 1	
Config and view details in Advanced	Cabinet Qty only according to actual situation	
Configuration) and also be an integral	during screen settings. The quantity of	
multiple of the quantities of cabinet rows	receiving card loaded by Port 3 \leqslant the quantity	
or columns and, meanwhile, be greater	of cabinet loaded by Port 1.	
than or equal to the quantities of cabinets		
loaded by the nth port.		

b) In case of special-shaped cabinets, cabinets with different size and special-shaped screen, the software NovaLCT-Mars is required to be connected to configure the screen.

c) During Data Flow setting, turn the knob to see the results of different types of data flow on the screen in real time. If satisfied with the current data flow, you must press the knob to save the setting. Press return key to exit from current operation.

d) During Data Flow setting, make sure that the data flow of each port is connected along the same direction.

e) During Data Flow setting, make sure that the start position of Port 1 is the start position of whole

data flow connection.

6.5 Step 3: Brightness Control

Return to main menu interface. Press the knob and select the corresponding value. At

this time, the knob can be turned to adjust brightness value.

Main	
🔆 Brightness	100%
Screen Settings	
Input Settings	
Sout Output Settings	
🚬 Display Control	
Advanced Settings	
Communication Settings	
🌍 Language	

6.6 Step 4: Output Settings

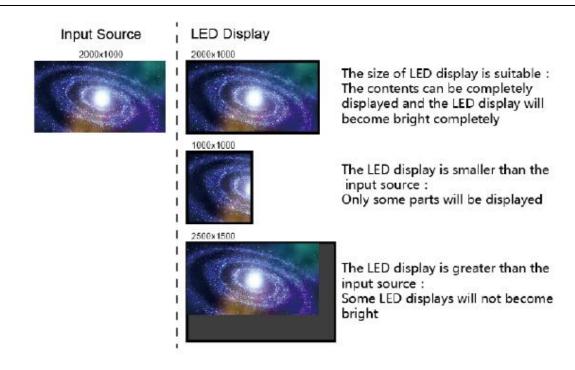
Output settings can be divided into three cases:

I: Point-to-point display, namely, scaling disabled. Size of output image is the same as input image and the output is based on original proportion.

Horizontal and vertical offset of image are set as required and operation steps

are shown in the figure below.

Output Settings	
Scaling	Disable
[A] Auto Fit To Screen	Disable
Custom Scaling	
🛄 Image Offset	
Apply to All	



Effects of scaling disabled

> II: Output image is adjusted to the size of display screen, namely it is self-adaptive

to the size of display screen.

Operation: Enable scaling and auto fit to screen.

Output Settings	Enable
🔼 Auto Fit To Screen	Enable
Custom Scaling	
Image Offset	
🔄 Apply to All	

III: Custom Scaling

Operation: Enable Scaling and disable Auto Fit To Screen to customize scaling.

Output Settings	
Scaling	Enable
🔄 Auto Fit To Screen	Disable
Custom Scaling	
Image Offset	
Apply to All	

Operating steps of custom scaling:

a) Input Capture setting, i.e., to capture the part of the image from one start position of the input image and display it on the LED screen. It is needed to set horizontal width(≤horizontal resolution of input source) and vertical height(≤vertical resolution of input source) as well as start X(horizontal start) and start Y(vertical start).

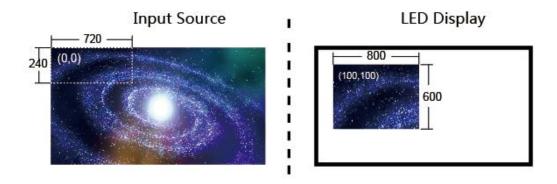
Custom Scaling]	Input Capture	
🖬 Input Capture 🕨 🕨		🕌 Input Source	DVI
Cutput Window		•w• Width (H)	720
		Height(V)	240
		🗖 Start X	0
		🗖 Start Y	0

b) Output Window setting, size of the window is smaller than or equal to the size of LED display. After window is set, images can only be displayed within the range of the window and be self-adapted to the size of the window.

Custom Scaling		Input Capture	
📑 Input Capture	•	+W+ Width (H)	800
Cutput Window	•	Height(V)	600
		🗖 Start X	100
		🗖 🛄 Start Y	100

After setting according to the above two steps, the captured content will be only

displayed on the set area of the LED display, as shown below:



Custom Scaling Effect

6.7 Display Control

Main		Display Control	
- Brightness	100%	Normal	4
Screen Settings		🗱 Freeze	
Input Settings		Black Out	
Output Settings		RGB Test Pattern	•
🔼 Display Control		Image Settings	•
Advanced Settings		🔛 Channel Effect	Cut
Communication Settings			
🚱 Language	•		

- > Normal
- **Freeze**: same as the function of FRZ button.
- > Black Out: same as the function of BLK button.
- > Test Pattern

Display Control]	Test Pattern	
Normal 🗸		👇 Pure Color	
🗱 Freeze		Gradient	
Black Out		Grid	
RGB Test Pattern		· -@- Orientation	0=0 0=1 1=0 1=1
Image Settings		Ö- Brightness	2
Channel Effect Cut		Space	4
		🚯 Speed	2

> Picture quality adjustment

Set contrast, saturation, hue, sharpness, color temperature, red brightness, green brightness, blue brightness and Gamma as required. Save these parameters to hardware after adjusting to satisfaction

Display Control		Image Settings	
Normal	✓	Contrast	50%
* Freeze		Saturation	50%
Black Out		Hue	5
GB Test Pattern		A Sharpness	1
👸 Image Settings		Color Temperature	Custor
Channel Effect	Cut	民 Red	25
		Green	25
		B lue	25
		Gama Gamma	2
		Image Settings	2.
			۷.
		Save to Hardware	2.
			2.
			2.
			2.
			2.
			2.

> Channel Effect

The software supports three effects: cut, fade and pop-up. Select Off to if off to switch

off Channel Effect.

Normal	×
✤ Freeze	Off
Black Out	Cut
RGB Test Pattern	Fade
👸 Image Settings	Pop-up
🔁 Channel Effect	Cı

6.8 Advanced Settings

Several options of major function setting are included in advanced settings, as shown in the figure below, including PIP, Advanced Configuration, Montage, etc. Operation of each function will be detailed for users in the following chapter.

Main		
Ö	Brightness	100%
	Screen Settings	•
Fin	Input Settings	
R	Output Settings	•
	Display Control	
Ó	Advanced Settings	
	Communication Settings	
8	Language	►

6.8.1 Picture in Picture (PIP)

To switch on or off PIP and set the input source of main screen as well as the size,

position and transparency of PIP and PIP crop settings.

Advanced Settings		PIP Settings	
PIP	▶	PIP Settings	(
Advanced Config		🕍 Main Source	D
Montage		PIP Source	V
Load Cabinet Files	► →	Width(H)	19
Alarm Threshold		Height(V)	10
Advanced Property	•	Start X	
Save to Hardware	•	Start Y	
📑 Redundancy		Transparency	
		🕞 PIP Crop Settings	

PIP: Switching on/off PIP is the same as the function of PIP button on front panel and synchronous with it.

Main source/PIP source: Input source switching of main screen and PIP is the same

as the function of input source switching button on front panel.

Width (H): Horizontal width of PIP

Height (V): Vertical height of PIP

Start X: Horizontal coordinates of PIP

Start Y: Vertical coordinates of PIP

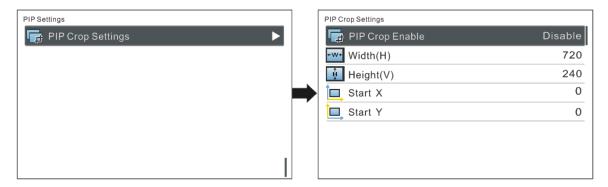
Transparency: Transparency of PIP

PIP Crop Settings:

Image cropped from the set starting position will be displayed on PIP and its size is

the set horizontal width and vertical height.

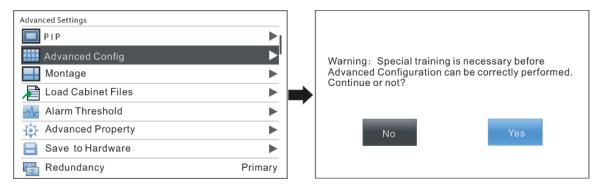
Please enable this function before setting horizontal width, vertical height, start X and



start Y.

6.8.2 Advanced Configuration

If the number of cabinets loaded by each Ethernet port is different and the preconditions of screen settings are not met, advanced configuration can be used now. Operating steps of advanced configuration are shown as below:



1) Enable Advanced Config

Please enable Advanced Config first since it is disabled by default in NovaPro HD.

Advanced Config defaults to "Disabled" . After the function is enabled, the rows and columns of the cabinets loaded by each port, offset, and data flow can be set respectively.

Advanced Config	
Advanced Config	Enable
nort1 Settings	•
nort2 Settings	
nort3 Settings	•
nort4 Settings	•
🗸 Apply	구 Return
i	

2) Ethernet Port Settings

Set the rows and columns of the cabinets loaded by each port, horizontal and vertical

Advanced Config		Port1 Load	
Advanced Config	Enable	Cabinet Row QTY	1
📊 Port1 Settings	►	Cabinet Col QTY	1
Port2 Settings	•	🗖 Start X	0
Port3 Settings	•	Start Y	0
Port4 Settings	•	Data Flow (Front View)	2
🗸 Apply	Return		

offset as well as data flow according to the actual layout of the cabinets.

Precautions for advanced mapping screen:

- a) If the cabinets are irregular shaped and the sizes are different and the LED screen is also irregular shaped, the software NovaLCT-Mars is required to be connected to configure LED display.
- b) When wiring method is set, real-time effect of different wirings can be displayed on the display screen by turning the knob. If you are satisfied, you must press the knob once to save the setting and press return key to exit the current operation. During data flow setting, turn the knob and the results can be viewed on the LED display in real time. Press the knob to save your setting if you are satisfied with it and then press return button to exit from current operation.

After Port Settings are completed, select "Apply" and press the knob to apply current

settings. If you want to quit the settings, select "Return" .

Advanced Config	Enable
Port1 Settings	•
Port2 Settings	
Port3 Settings	►
Port4 Settings	
🛹 Apply	구 Return

6.8.3 Montage

For oversized LED display, two or more NovaPro HD units are needed for montage. In

this case, the loading area of each NovaPro HD unit needs to be set respectively.

Enable Montage first and set total width and height of the LED display. Then set the

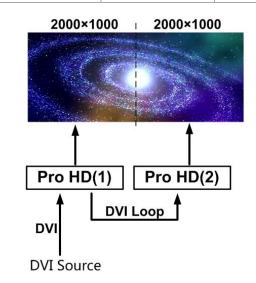
size and starting position of loading area of the NovaPro HD unit.

Total sizes of loading area of all NovaPro HD units are the total sizes of LED display.

Advanced Settings			Montage	
PIP	•		Montage	Enable
Advanced Config	Þ		(IIII) Total Width(H)	4000
Montage	►		Total Height(V)	1000
Eoad Cabinet Files		\Rightarrow	+w+ Load Area With	2000
			🕴 Load Area Height	1000
Advanced Property			🗖 Load Area X	0
Save to Hardware			🗖 Load Area Y	0
Redundancy	Primary			

Montage Example: the total number of pixels of the LED display is 4000×1000, which has exceeded the load of a single Pro HD unit. Montage can be applied and two Pro HD units can be used for montage. See detailed parameter settings and the connections in the chart and figure below.

	Pro HD (1)	Pro HD (2)
Total Width(H)	4000	
Total Height(V)	1000	
Load Area Width	2000	2000
Load Area Height	1000	1000
Load Area X	0	2000
Load Area Y	0	0



Montage Connections (referring to the Chapter: Signal Connection)

Note: If montage is to be enabled, please ensure Output Settings is in the third case: Custom Scaling, namely, set Scaling as enable while Custom Scaling as disable.

6.8.4 Load Cabinet File

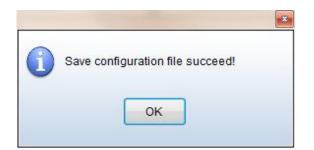
Connect NovaPro HD to PC and run NovaLCT-Mars on PC. Import cabinet configuration file saved before into the controller.

1) Save cabinet configuration file

After receiving card is configured, click Save File to save cabinet configuration file

(.rcfg) to local file on PC.

Screen Config-COM4			
Sending Board Scan Board Screen Conn	ection		
Module Info			
Chip: Common C S	Size: 32W×32H	Scan Type: 1/4 scan	
Direction: Horizontal [Decode Type: 74HC138 Decoding	Data Group: 4	>>
Cabinet Info			
Cabinetinio			
Regular	🔘 Irregula	ar	
	265 Please Vidth:	?? Heiaht: ??	Please
	make sure	id error. Please adjust perform	make sure
Module Casc Right to Left		struct View Cabinet	the width and height
Performance Setting			
Group Swap More Setting			
Refresh Rate: 480 -	Hz Accelerate R 4	-	
Gray Scale: Normal 4096 🗸	Gray Mode: Re	fresh Rate First -	
	Data Duta		
Clock Phase: 2		V	
Blanking Time: 25	(=2.00us) Ghost Contro 20	⇒ (1~24)	
Line Change T 3	(0~19)		
Brightness Effi 69.01%	Min OE: 32	8 ns	
Smart Setting	Load File	Save File Read From HW	Send To HW
Smart Setting	Load File	Save File Read From HW	Send To HW
Smart Setting		Save File Read From HW	Send To HW
Smart Setting			
		Config File Save	Close
			Close
		Config File Save	Close
 □ 另存为 ○ ○ ○ ○ ▶ 库 → 文档 → 组织 ▼ 新建文件夹 	Save	Config File Save	Close X
 □ 另存为 □ ● 库 → 文档 → 组织 ▼ 新建文件共 ☆ 收藏共 	Save Save	Config File Save	Close X P
 □ 另存为 □ 日本 □ 日本	Save	Config File Save ▼ ↔ 援索文档	Close × ・ 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、 、
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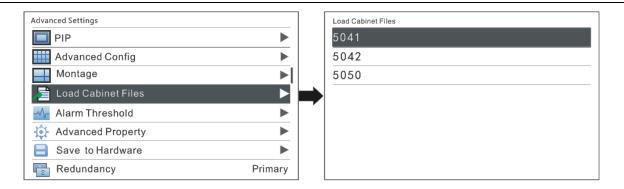
2) Import cabinet configuration file into NovaPro HD.

Operating steps are shown in the figure below:

MovaLCT-N	Nars V4.3.0 T2		
System(S)	Tools(C) Plug-in Tool(P) User(U)	Language(Lang)(L) Help(H)	
Screen Conf	Diapley Central/D)	trol Monitor Function Card	
 Local System Control System 	Monitor(M) Function Card(F) Hardware Information(H)	0 View Detail	
Monitor Info	Multiple Screen Management(A) Point Detect(T)	😵 🤸 🧿 🔳	···
	Prestore Picture(R) Color Restore(O) Light Panel Flash(U)		
Server Status:	Receive Card relay(I) MultiBatch of Adgustment(M)		
	Load configuration file(E)		

🖷 Load configuration file	Load configuration file
Select COM port: COM3	Select COM port: COM3 💌
Move Up Move Down	Config file 1 Move Up Move Down
Add File Delete File	Add File Delete File
Rename File Save to HW	Rename File Save to HW

3) Load Cabinet File



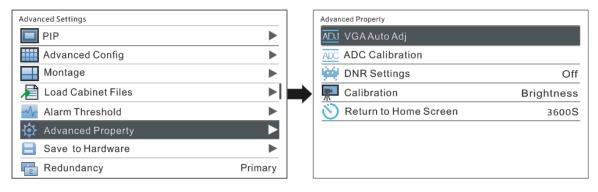
6.8.5 Alarm Threshold Settings

Set the threshold values of temperature and voltage. When temperature or voltage of NovaPro HD exceeds the threshold value, temperature or voltage on the home page

of the screen will turn red and blink.

Advanced Settings			Alarm Threshold	
PIP			Lemperature MAX	85℃
Advanced Config			Temperature MIN	-20°C
Montage	•		Voltage MAX	7.5V
🔎 Load Cabinet Files	▶		Voltage MIN	3.5V
	►	ŕ		
Advanced Property				
E Save to Hardware	•			
Redundancy	Primary			

6.8.6 Advanced Property



Including following functions:

VGA Auto Adj: sampling parameters of VGA input signal are automatically adjusted

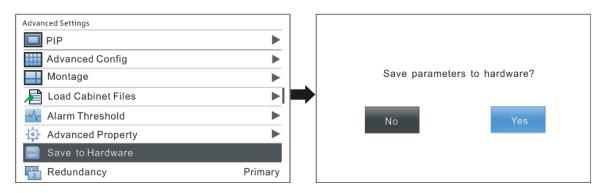
so that VGA image is clear and complete. Select this menu and then press the knob once to perform VGA automatic adjustment once.

ADC Calibration: Images will be color cast or darker etc. when analog signal is accessed into processors without ADC calibration. NovaPro HD is able to automatically perform ADC calibration based on input analog signal (including CVBS and VGA) to solve above problems. Select this menu and then press the knob once to perform ADC calibration once.

DNR Settings: It is available when image input port is not VGA and there are five modes of noise reduction: "Off", "Auto", "Low", "Medium" and "High".

6.8.7 Save parameters to hardware

Save all the configurations of NovaPro HD to hardware and the data will not be lost after power off.



6.8.8 Redundancy

Set this controller as primary control or backup. "Primary" or "Backup" will be displayed on the main interface.

Advanced Settings	
PIP	
Advanced Config	►
Montage	
) Load Cabinet Files	►
Alarm Threshold	►
Advanced Property	Primary
📃 Save to Hardware	Backup
Redundancy	Primary

6.8.9 DMX512 Channel Settings

Set the starting channel of DMX512. NovaPro HD currently has extracted 16 property channels. 0~8 have been defined with properties and the rest are not defined for the moment.

For example, if the starting channel is set as 1, the controller will take 16 channels from the 1st channel as available channels.

6
V4.4.1.2

Definitions of channel properties are shown in the table below:

Channel No.	Property Definition
0	Global Brightness of LED display
1	Contrast
2	Saturation

3	Hue
4	Color temperature
5	Red component brightness
6	Green component brightness
7	Blue component brightness
8	Gamma
9	Undefined
10	Undefined
11	Undefined
12	Undefined
13	Undefined
14	Undefined
15	Undefined

6.8.10 Factory Reset

Restore NovaPro HD to factory settings.

6.8.11 Hardware version

View hardware version of NovaPro HD.

6.9 Communication Settings

Set communication mode and network parameters of NovaPro HD.

There are two communication modes, one is USB Preferred and the other is LAN Preferred. If both USB and LAN port are connected to control computer and LAN Preferred is selected, system will use LAN to control. If only USB port is connected, the setting will be unavailable and system will use USB to control.

Network modes include "Manually" and "Automatically". It is obtained through DHCP while in "Automatically" mode.

Main		Communication Settings			
- Brightness 10	1%	🌐 Mode Select	USB Preferred		
Screen Settings		Network Settings	•		
🥖 Input Settings					
🔎 Output Settings					
🚬 Display Control					
Advanced Settings					
Communication Settings					
🚱 Language					
		Communication Settings		Network Settings	
		Mode Select	USB Preferred	🔛 Config IPv4	Manually
		Network Settings	•	IP Address	192.168.5.12
				MISM Subnet Mask	255.255.255.0
				🔹 🧌 Rest	

6.10 Language Settings

NovaPro HD supports Chinese and English at present.



7 Web Interface Operation

Access Web control interface of Pro HD through browser. Main operating steps, functions and corresponding parameter configuration requirements are the same as the operation of the controller. This chapter only covers network establishment, motion description and features of Web interface operations. Please refer to the relevant chapters of controller operation for specific parameter configurations and configuration requirements.

7.1 Network Establishment

- 1) Connect Pro HD to the same LAN and network segment as the control computer.
- 2) Turn on the power of Pro HD and set communication settings on the controller referring to <u>7.9 Communication Setting</u>. Local IP can be obtained automatically or manually if you know the IP address.
- 3) Open up the browser on control computer. Enter the local IP of Pro HD and open up the web configuration interface.

7.2 Operating Motion Description

The Web interface of Pro HD is shown as the picture below. Compared with controller operation, the operation with Web interface is more intuitional and clearer.

NOVASTAR NovaPro	HD	INPUT)
		MAIN DVI No Signal PIP DVI Inactive		BLK
SDI DVI H	DMI VGA DP CVBS	Screen 128*512 @60Hz Port 1 2 3 4		FRZ 🚥
		STATUS	\$	
£	uuitalaise lauttase	Primary 🔅 42% 🌡 32°C 🕑 4.8V	** 🖪 *a	PIP 🚥
6 source s	witching buttons	🖸 🖧 🔓	Tool bar 3	
			d	isplay 🔍
Ö. Brightness		42	9% (0 _~ 100)	ontrol
Screen Settings			b	uttons
🎉 Input Settings				
🖌 Output Settings				
🔝 Display Control				
Advanced Settings	Menu bar			
Metwork Settings				
My Device				
😚 Language Settings				

Toolbar: The toolbar will be highlighted when you move the mouse over it. By clicking the toolbar, you can get into the configuration pages of sub menus. The functions are the same as the menus in the bottom left of the page.

Menu bar: click the mouse and enter the parameter configuration interface in the main menu. If there are sub menus, sub menu bar will pop out.

Six input source switching buttons: the input source of the main screen can be switched with mouse clicking. The switching of the input source of PIP needs to enter

"Advanced Settings" \rightarrow "PIP" sub menu interface settings, as shown in the figure below.

SDI DVI HDMI	VGA DP CVBS	INPUT MAIN DVI No Signal PIP DVI No Signal OUTPUT Screen 128*512 @60Hz Port 3 2 3 4 STATUS Primary 2 87% & 34°C @ 4.8V C 0 4.8V		BLK - FRZ - PIP -
 Rightness Screen Settings Input Settings Output Settings Display Control Advanced Settings Network Settings My Device Language Settings 	PIP PIP Source SDI PIP Crop Settings PIP V Apply PIP Crop Sett Width(H) Height(V) Start X Start Y	DVI HDMI VGA Window Settings tings	DP CVBS 726 (64~1920) 98 (48~1080) 0 (0~1856) 0 (0~1032)	

Three display control buttons: the indicator lights default to blue and turn green

when enabled.

7.3 My Device

The name of the device can be modified, which is a unique function of Web interface

operation.

NOVA) STAR NovaPro HD		INPUT		
		MAIN DVI PIP DVI	No Signal No Signal	BLK
SDI DVI HDMI V	VGA DP CVBS	OUTPUT Screen Port	128*512 @60Hz 1 2 3 4	FRZ -
			-87% 🜡 35℃ 🔍 4.8V 르= 🕞	PIP -
;රු: Brightness				
	vice Name MyPro	(0~32,	letters,numbers)	
🖌 Input Settings 🛛 🗛	pply			
Sout Output Settings				
🖾 Display Control				
Advanced Settings				
Metwork Settings				
🚥 My Device				
🚱 Language Settings				

8 LCT Client Operation

Communication between control computer and Pro HD is via USB control cable.

Compared with the operation through controller and Web, LCT client can provide

users with the most comprehensive functions and configuration parameters.

The main functions include screen configuration, brightness adjustment, monitoring,

calibration, etc. Please refer to Nova M3 Control System User Manual for specific

operations of these functions.

Operation interface of LCT client is shown as the figure below:

creen Configuration	Brightness	Calibration	Screen Control	Monitoring	Multi-function Card	My NovaiCare
cal System Information				-		
Control System	1	Other Dev	vice Unk	nown <u>v</u>	ew Details of Device	
nitor Information						
100						
•		•				(Monitoring Card

9 Firmware Upgrade

There are two ways to upgrade the firmware of Pro HD: upgrade by U disk and LCT client.

1) Upgrading firmware by U disk

Firmware upgrade by U disk must meet two conditions:

- a) The format of the U-disk must be FAT12/16/32.
- b) Software package must extract to the root directory of the U-disk.

There are two ways to upgrade firmware by U-disk: a) Plug U disk into the USB port on the front panel. Press FRZ button and PIP button simultaneously when turning on power and the unit will enter firmware upgrade mode. b) Plug in U disk after power on. Choose whether to upgrade or not according to prompt.

2) Upgrading firmware by LCT client

Connect Pro HD to PC and run NovaLCT-Mars on PC. Log in advanced user and the password is "admin". Then click "admin" on you keyboard after logging in and

🔅 🛛	C) Tools(T) Plug-in	(P) User(U) La	nguage(L) Help(H	0	
Brightness Screen (lulti-function Card	ly NovaiCare		
Local System Information	1				
Control System	1 Other D	Device Unkr	iown <u>View Det</u>	ails of Device	
Monitor Information					
**	and the second s				
•	•			0	
ervice Status: Service ve System(S) Settings (nguage(L) Help(H))	
System(S) Settings (C) Tools(T) Plug-in	Advanced Enter Der	User Login (A) nonstration Mode(E))	
System(S) Settings (Brightness Screen C	C) Tools(T) Plug-in	Advanced Enter Der ulti-function Card	User Login (A)		
System(S) Settings (Brightness Screen C	C) Tools(T) Plug-in	Advanced Enter Der ulti-function Card M in adm	User Login (A) nonstration Mode(E) ly NovaiCare		
System(S) Settings (Brightness Screen C Local System Information Control System	C) Tools(T) Plug-in Control Monitoring Mu User Logi	Advanced Enter Der ulti-function Card M in	User Login (A) nonstration Mode(E) ly NovaiCare		
Brightness Screen C Local System Information	C) Tools(T) Plug-in Control Monitoring Mu User Logi	Advanced Enter Der ulti-function Card M in adm	User Login (A) nonstration Mode(E) ly NovaiCare		
System(S) Settings (Frightness Screen C Local System Information Control System Monitor Information	C) Tools(T) Plug-in Control Monitoring Mu User Logi	Advanced Enter Der ulti-function Card M in Password	User Login (A) nonstration Mode(E) ly NovaiCare hin		

the program loading page will pop up.

System(S) Settings	(C) Tools(T) Plug-in (P)) User(U) L	.anguage(L)	Help(H)	
Screen Configuration	Brightness	Calibration	Screen Control	Monitoring	Multi-function Card	My NovaiCare
ocal System Informatio	on					
Control System	1	Other Dev	rice Unl	known <u>V</u>	iew Details of Device	
Monitor Information				the second se		
Monitor Information						

Select Operation Comm	nunication Port
Current Operation	USB@Port_#0001.Hub_#0001 Device Count 1
Communication Port	
Select Program	
Program Name	
Program Version	V1.0.0.0
Program Path	E:W3\中文\VX系列Data_VX4S_1.0.0.0
The Selected Items to L	Dad
	Receiving Card EPGA
Sending Card	Receiving Card FPGA
	Υ
ardware Version Info	
Refre	et Po Send 1 🖶 Port 1 🖶 Rece 1 🖨 🛛 🕞
V Relie 0 S	et Po Send 1 🐨 Port 1 🐨 Rece 1 🐨 Rein
	arks 2015.11.04 V1.0.0.0 VX4S Debug
	arks 2015.11.04 V1.0.0.0 VX4S Debug
⊕- V1.0.0.0 Total 1,Rem	arks 2015.11.04 V1.0.0.0 VX4S Debug
Sending Card Receiving	arks 2015.11.04 V1.0.0.0 VX4S Debug
Sending Card Receiving	earks 2015.11.04 V1.0.0.0 VX4S Debug
Sending Card Receiving isplay Info 015/11/5 16:06:44Connect	Card FPGA
Sending Card Receiving isplay Info 015/11/5 16:06:44Connect	earks 2015.11.04 V1.0.0.0 VX4S Debug
Sending Card Receiving isplay Info 015/11/5 16:06:44Connect	Card FPGA

Current operation communication port: Choose the serial port, the hardware program of which is to be upgraded.

Program path: Select the hardware program to be upgrade currently.

Sending card: Check to update all the programs of sending card.

FPGA of receiving card: Check to update FPGA program of receiving card.

Update: Change hardware program into hardware device.

Refresh all: Check this option and click Refresh to refresh and display the program versions of all sending card and receiving card of current serial port.

Set refresh: Click "Refresh" to set refresh and display the version information of one receiving card.

Refresh: Refresh and display the version information of hardware in order to 刷 make sure the hardware program is updated.

Problem	Solution				
	Check whether the power is correctly connected and the switch				
	is on.				
	Use test pattern to check whether the LED is correctly				
Blank screen of	connected and is working properly.				
LED display	Check whether Pro HD has signal input and the output is set as				
	black out.				
	Check whether the display configuration mode and parameters				
	are correct.				
	Check whether the input channel has image input and it is				
Monitoring port	displayed normally.				
output is	Check whether PIP is enabled and channel 2 has signal input				
abnormal	and the image is displayed normally.				

10 Troubleshooting and Precautions

	Check whether monitor output is connected correctly and the
	connection is not loose.
	If connecting Pro to display, please confirm whether the display
	supports the output resolution of Pro.
	Try to cut the power and restart the device. Then reset Pro and
	do the operations again.
VGA input phase offset	Perform VGA auto fit
DID displays	Check whether channel 2 has signal input and it is displayed
PIP displays	normally.
abnormally	Check whether the parameter settings of PIP are correct.
Channel effect is abnormal	Check whether channel is switched on.
Montage is	Check whether montage is enabled and the parameter settings
Montage is abnormal	are correct.
	Check whether input signal is normal.
	1) This product only supports rectangular screen composed of
	cabinets with same size and specifications for machine
Precautions	configuration. Irregular cabinets and screens need to be
	configured on LCT client.
	2) It is not recommended to alternately operate one LED

display via machine operation, Web operation and LCT client
operation.

Please troubleshoot the devices according to above steps. If problems cannot be solved, please contact our local dealers or customer service department. Since there are components with high voltage inside the controller, please DO NOT maintain it by yourself for the sake of your safety.

Inputs		
Port	Number	Resolution ratio specs
CVBS	1	PAL/NTSC
VGA	1	VESA standard
DVI	1	VESA standard (supporting 1080i input), supporting
		HDCP
HDMI	1	EIA/CEA-861 standard, in accordance with
		HDMI-1.3standard, supporting HDCP
DP	1	VESA standard
3G-SDI	1	480i、576i、720p、1080i/p(3G SDI)

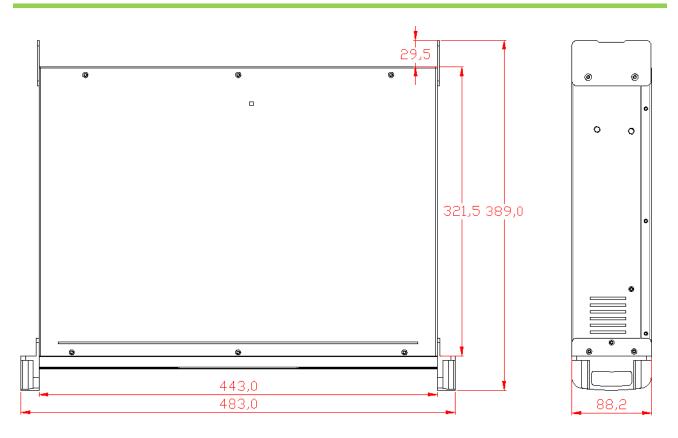
11 Technical Specifications

Outputs		
Port	Number	Resolution Ratio Specs
DVI input loop (DVI LOOP)	1	In accordance with DVI input, supporting HDCP loop
DVI	2	1280×1024/60Hz 1440×900/60Hz
HDMI	1	1680×1050/60Hz 1600×1200/60Hz 1600×1200/60Hz – Reduced 1920×1080/60Hz/50Hz 2560×816/60Hz 2048×640/60Hz 1920×1200/60Hz 2048×1152/60Hz 1024×1280/60Hz 1536×1536/60Hz Custom output resolution (band-width optimization) Horizontal resolution up to 3840 pixels Vertical resolution up to 1920 pixels
SDI input loop (SDI LOOP)	1	480i、576i、720p、1080i/p(3G SDI)

Control Interface			
Port	Number	Instruction	
USB	2	Upper computer control interface	
RJ45	1	Multi-units communication interface	
DMX	1	Connected to all kinds of control interfaces that support DMX512 interface protocol.	

Overall Specifications			
Input power	AC 100-250V, 50/60Hz		
Overall power consumption	30W		
Operating temperature	-20~60°C		
Dimensions(L x W x H)	483×389×88.2 (mm)		
Weight	6 Kg		

12 Installation Dimensions



(Unit: mm)