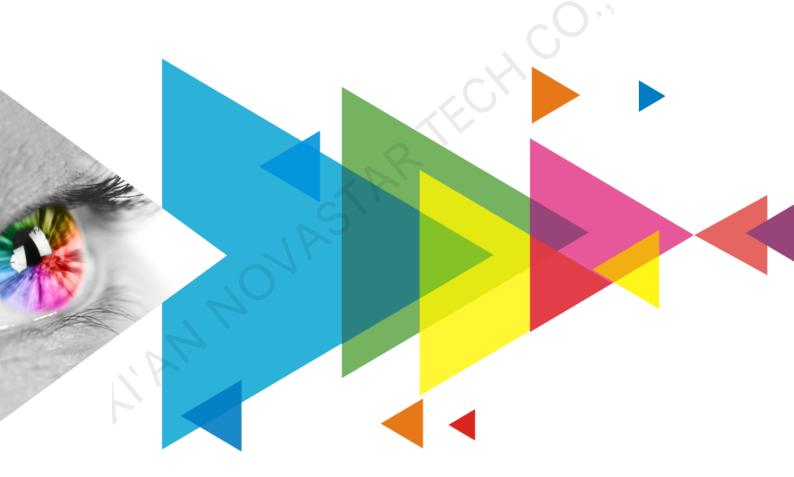


NovaLCT LED Configuration Tool for Synchronous Control System



User Manual

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1 Software Introduction

The LED display control systems are categorized into synchronous control system and asynchronous control system. In synchronous control system, the images are played and controlled on the screen synchronously with the video source (such as on PC or camera). In asynchronous control system, they are played and controlled asynchronously. The program is pre-stored on the local playback device and then played according to the playback schedule.

No matter in which control system, the application scenario requires a piece of supporting software to configure the control system. Based on the needs of different users, NovaStar has designed and developed an LED screen configuration tool — NovaLCT.

As a basic screen configuration tool running on Windows, NovaLCT has the following features.

Easy to install

The latest installation package can be downloaded from NovaStar official website www.novastar.tech at any time and it is quick and easy to install.

Practical functions

A lot of commonly used functions are provided, such as screen configuration, screen monitoring, redundancy settings, brightness adjustment, multi-batch adjustment, dark or bright line adjustment, multifunction card management and other configuration functions. Thanks to these functions, the screen can present optimal display effect and is easy to manage and maintain.

Wide scope of applications

NovaLCT can be used to configure NovaStar synchronous control system products and multimedia players of asynchronous control system. It meets different needs of screen manufacturers, contractors, distributors, rental application clients, end users and technical support engineers.

Efficient configuration

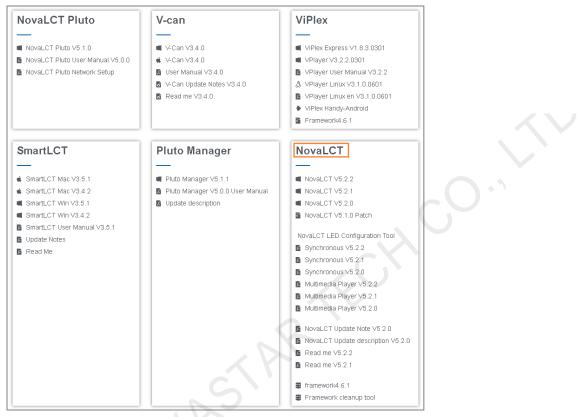
After the PC and control system product are connected, users can perform any operations with the PC. NovaLCT displays the corresponding functions and parameters according to the different hardware models and programs. During configuration, various kinds of configuration files can be used to complete operations quickly. If the configuration information is saved to the hardware, it will not be lost even after the hardware is powered off.

2 Software Installation

Obtaining Software

Visit www.novastar.tech and choose **DOWNLOADS** > **Software**. In the NovaLCT area, download the needed version of software installation package.





Installing Software

Before installing NovaLCT, prepare a Windows PC and disable the antivirus software.

Unzip the installation package, run the .exe file and follow the setup wizard to complete the installation. If a firewall prompt appears, choose to allow the installation.

If the PC does not have the serial port driver program or the program version is earlier, the NovaLCT installation program will automatically install or update the program.

Verifying Installation

If the installation is successful, the shortcut k appears on the desktop, and k and k icons appear on the taskbar.

3 Device Connection

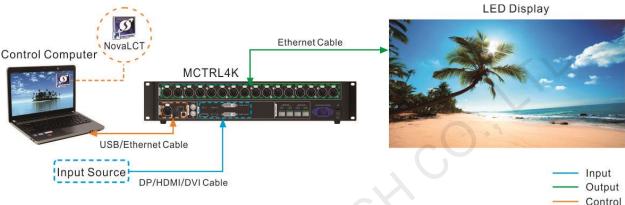
3.1 Connect PC to Sending Card

Connect the PC with NovaLCT installed to the sending card with control cable (USB cable or Ethernet cable), as shown in Figure 3-1. The MCTRL4K is used as an example of sending device.

All control commands, parameters and configuration files are transmitted with the control cable.

The PC can also be connected to multiple sending cards with control cable. After selecting a target communication port in NovaLCT, you can operate the connected device.

Figure 3-1 Hardware connection example



If the receiving card supports no sending card mode, the PC with NovaLCT installed can be directly connected to the receiving card with Ethernet cable. For related settings, see 13.1 How do I set the required parameters in no sending card mode?

3.2 Connect NovaLCT to Sending Card

If the hardware connection is normal and the sending card is operating normally, NovaLCT connects to the sending card automatically. After successful connection, the NovaLCT main window displays the sending card quantity and monitoring information about the control system, as shown in Figure 3-2.

Ciau ma	$\gamma \gamma$	Main	window.	/NIat	loaged	:)
гюше	·>-/	iviain	window		locided	ILLI

2			~~~		~~	
Cloud Monitoring	Brightness	Screen Control	Monitoring Mu	Ilti-function Card	Test Tool	
ocal System Inform	mation					
Control System	1	Other De	vice 0	Vien	w Details of Device	
			191			
			•		•	

Click **View Details of Device** to view the communication port, device name, device quantity and SN. If the communication port information contains IP address, NovaLCT communicates with the device via Ethernet port. If it contains "USB" characters, they communicate via USB port. "SN" is the unique identifier of the sending card.

Connection related operations:

Reconnect sending card

Choose System > Reconnect.

Restart server

On the taskbar, right click and click Restart.

• Set connection parameters

On the taskbar, right click **Markov**, click **Detect Config** and set the marked parameters in the figure below.

3

🖳 Detect Co	onfig	37 <u>—</u> 33		×
Auto I	Detect Config-			
	Auto detect co			
_	t Interval Confi etect interval:	30	÷ s	
L	al Controller Co	[▼ 2	
]Enable virtual		r	
	ОК	Can	cel	

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4 User Login

Sending Card Connected

If the sending card is connected, users can directly use the available functions without login. To use the advanced functions, users must log in to NovaLCT.

Operations:

Choose User > Advanced Synchronous System User Login. Enter the password and click Login. The default password is "admin".

After successful login, the main window is shown as Figure 4-1.

Figure 4-1 Main window (Logged in)

System(S) Settin	ngs (<u>C</u>) Tools(<u>T</u>)	Plug-in (<u>P</u>) Use	er(U) Language(L)	Help(<u>H</u>)			
2		۰.	F				
Cloud Monitoring	Screen Configuration	Brightness	Calibration Screen	Control Monitoring	Multi-function Card	Ŧ	
Local System Inform	nation						
Control System	1	Other Device	Unknown	View Details of Devic	<u>e</u>		
Monitor Information							
	13		191	6			
L							
Service Status: Servi	ice version:3.1.1					:	
Other Opera	tions:						

- To log out, choose **User** > **Logout**.
- To change the login password, choose User > Change Password.

Sending Card Not Connected

If the sending card is not connected and users want to learn about the functions, use the demonstration mode. **Operations:**

Choose User > Demonstration Login. Enter the password "admin" and click Login.

5 Screen Configuration

Generally, the screen is first built and then configured.

If users already have an appropriate configuration file, follow the operations in 5.1 Load Configuration File to finish screen configuration quickly. If manual screen configuration is required, follow the operations in 5.2 Configure Screen Manually in order.

5.1 Load Configuration File

Applications

Load a cloud or local configuration file to finish screen configuration quickly.

Applicable Products

All receiving cards and sending cards

Prerequisites

- Load a cloud configuration file: The control computer is connected to the Internet.
- Load a local configuration file: The system configuration file (.scfg and .zip) is prepared.

Related Information

- The information in the cloud configuration file and local .zip file can be viewed in NovaLCT, but cannot be modified before the information is sent to the hardware.
- The information in the local .scfg file can be viewed and modified in NovaLCT before the information is sent to the hardware.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 Click screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-1.

Figure 5-1 Screen configuration method

Screen Configuration		×
Select Communication	Port	
Current Operatio	СОМ99 🗸	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse	
	Next Close	

Step 3 Choose a communication port.

If the PC is connected to multiple sending cards with control cable, there are multiple ports in the drop-down list.

Step 4 Perform any of the following operations as needed to load a configuration file.

Load from cloud platform



- a. Select **Cloud Restore** and select a node from the drop-down list.
- b. Click **Next** to open the **Restore Configuration File** dialog box.

			onfiguration File-COM99 d Receiving Card Screen C	onnection		- □ >	×
			g card redundancy				_
			Serial Number of Primary Sending Card	Serial Number of Primary Port	Serial Number of Backup Sending Card	Serial Number of Backup Port	
	►	1	1	1	1	2	
		2	1	3	1	4	
						Send to HW	
Ba	ckup	Fil	e: novastarScreenBackup	File.zip Software Ve	ersion: NovaLCT V5.4.4.1982	.T1(PingBoss)	

c. Select a tab as needed and send the configuration file to the hardware.

Sending Card: Click Send to HW to send the Ethernet port redundancy configuration file of the sending card to the hardware.

Receiving Card: Select **Send By Topology** or **Send By Physical Address**, set the related parameters, and click **Send to Specified RV Cards** to send the receiving card configuration file to the hardware. When you have selected **Select by Topology or List**, if it is not convenient to select an area with the software, you can select **Select Operating Area on Screen** to select the area on the display window.

Screen Connection: Click Send to HW to send the screen connection file to the hardware.

d. In the displayed dialog box, click Save to HW or Don't Save to HW.

Load from local PC

- a. Select Local Restore.
- b. Click Browse, select a configuration file, and click Open.
- c. Click Next.

For the .zip local configuration file, see the figures and steps in the **Load from cloud platform** section. For the .scfg local configuration file, the loading progress will be displayed. After the file is loaded, the dialog box shown below is closed automatically.



5.2 Configure Screen Manually

For a common screen, set the input source, light the screen and connect the screen in order to complete the screen configuration.

Notes

The screen configuration page in NovaLCT varies depending on the functions supported by the sending card and receiving card.



5.2.1 Step 1 Set Input Source

Applications

Set the input source type, resolution, refresh rate and bit depth for the sending card to make the screen display the specified input source pixel to pixel.

Applicable Products

The V1160 and VX16s all-in-one devices, and other sending cards

Prerequisites

None

Related Information

If the resolutions of the sending card and screen are the same, the image can be displayed pixel to pixel. If the refresh rate is too low, the screen flickers. A higher refresh rate helps stabilize the display image.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-2.

Figure 5-2 Screen configuration method

Screen Configuration			×
-Select Communication	Port	5	
Current Operatio	COM99	v]
Configure Screen			
O Cloud Restore		~	
 Local Restore 			Browse
14.		Next	Close

Step 3 Choose a communication port.

If the PC is connected to multiple sending cards with control cable, there are multiple ports in the drop-down list.

Step 4 Select Configure Screen and click Next to open the Screen Configuration page.

creen Configuration-USB@Port_#0002.H	lub_#0001		_		×	
ending Card Receiving Card Screen Cor	nection					
Display Mode			Refre	sh		
Current Display Mode Sending Card 1920 x 1080(1080	P) Graphics Output	t R 1366 x 768				
Select Input Source						
Video Input Automati HDMI	✓ Send					
Source Configuration						
Source: DVI	~					
Resolution: 1920 x 1080 px	Custom.	1366 🔶	(768 ≑			
Refresh Rate T 60	 Hz Input Source 	e Bit De 8 Bit	~			
Source Backu Set			Set			
Hot Backup Verification	Wo	rking Mode Set Working)			
Redundancy Set the Current Devi 🔲 Set as Pr	imary	Set as Backup	Set			
Primary		Backup)			
Serial Number of Primary Sending Card	erial Number of Primary Port	Serial Number of Backup Sending Card	Serial Number o Backup Port	r	-0	
Refresh Send		Add	Edit Dele	te		
Restore Factor Restore Syste Bac	k Up Syste Export So	reen M Save System C	Save	Clos		

Step 5 On the Sending Card tab page, view the current display mode, as shown in Figure 5-4.

Figure 5-4 Input source information

Figure 5-3 Screen configuration

- Display Mode		10-		Refresh
Current Display Mod				
Sending Card	1280 x 720(720P)	Graphics Output R	1920 x 1080	Curre HDMI
Select Input Source Video Input	HDMI	✓ Send	3D Function	Settings
-Source Configuratio	n			
Source:	HDMI ~]		
Resolution:	1920 × 1080 p× 🛛 🗸	🔲 Custom	1920 🌻	χ 1080 🚖
Refresh Rate T	60 ~	Hz Input Source Bit	De 8 Bit	Set

- Step 6 Select **Automatic Selection** to allow NovaLCT to automatically select the input source according to the input signal, or select an input source from the drop-down list.
- Step 7 Click **Send** to send the configuration information to the hardware.
- Step 8 In the **Source Configuration** area, set the input source type and the corresponding resolution. You can select a resolution from the drop-down list or customize a resolution.
- Step 9 Set the refresh rate and bit depth of input source.

After you change the refresh rate, you are advised to resend the performance parameters on the **Receiving Card** tab page to avoid the problem that the receiving card cannot automatically fit the refresh rate. The recommended input source bit depth is 8 bit.

Step 10 For the MCTRL660 PRO and MCTRL R5, you can perform the following operations to set input source backup if necessary. Otherwise, skip this step.



- 2. Select Start source backup.
- 3. Set the input source backup relation and click OK.

Figure 5-5 Source backup settings

Source backup setting			×
🗹 Start source backu	p		
SDI	HDMI	\sim	
HDMI	SDI	~	
HDBaseT	NULL	~	
DVI	NULL	~	
		Cancel	

- Step 11 Click Set to send the configuration information to the hardware.
- Step 12 Click Refresh to confirm the result of input source setting.
- Step 13 Click Save to save the configuration information to the hardware.
- Step 14 After successful saving, choose whether to save the screen monitoring backup file to the local computer.

When the control computer can access the Internet, you can use the backup file to register screens to VNNOX Care. For details, see 7.1.2.1 Register by Using Local Backup Files (Recommended).

This step is related with the configuration of the save function. See 11.1 Configure the Save Function.

Figure 5-6 Successful saving

		×
1	Information saved to hardware successfully. Do you want to back up the screen monitoring parameters?	
I	OKCancel	

Notes

You can click **Restore Factory Settings** on the **Sending Card** tab page to reset the sending card configuration information to factory settings.

5.2.2 Step 2 Light a Screen

5.2.2.1 One-Click Screen Configuration

Applications

Load a receiving card configuration file from the cloud platform or local computer to quickly light a screen.

Applicable Products

All receiving cards

Prerequisites

- The receiving card firmware supports the module chip.
- If you want to load a receiving card configuration file from the cloud platform, the control PC must be connected to the Internet.
- If you want to load a receiving card configuration file from the local computer, the configuration file (.rcfgx/.rcfg) must be prepared.



Related Information

The configuration file cloud platform is specially used to store the receiving card configuration files. The files can be searched and download, which is convenient for users to use the configuration files.

Operating Procedure

Step 1 On the main window, click Quick Configuration to open the dialog box shown in Figure 5-7.

Figure 5-7 Choosing communication port

One-Click Screen Con	figuration	×
-Select Communication	Port	
Current Operatio	USB@Port_#0001.Hub_#0001 ~	
	Next	Close

Step 2 Choose a communication port and click Next to open the dialog box shown in Figure 5-8.

Figure 5-8 One-click screen configuration

💀 One-Click Screen Configuration	~ -	
Enter the module number/configuration file name	Search	Load
STA		
NAS		
Please search or	load	
Cloud server connected successfully		
· Olda Scher Connected addressiony		.:

If the PC is connected to multiple sending cards with control cable, there are multiple ports in the drop-down list. In the bottom-left corner of the page, the status of connection between NovaLCT and cloud platform is displayed. Step 3 Perform any of the following operations as required to load a configuration file.

Load from cloud platform

Enter a keyword and click Search.

- When only one configuration file is found, the file will be automatically downloaded and then loaded.
- When multiple configuration files are found, click after it is downloaded.

🖶 One-Click Scr	een C o r	figuration			-		×	
rcfg					earch	Load		
File	e Name			Remarks		Status	^	
2017TD.rcfgx		2	017TD			<u> </u>		
2033.rcfgx		2	033			<u> </u>	_	
2053.rcfgx			053			<u>+</u>		
2055.rcfgx		2	055			.		
Module Informat	ion							
Chip	ICN2	:053		Scanning Type	1/27 sc:	an		
Size	48VV	×27H		Decoding T	LS9739	_Common.		
Parameter Infor	mation							
Refresh Rate:	2760			GrayDepth:	14 Bit			
Cabinet Informat	tion							
Width (Pixel)	192			Module Colu	4	E		
Height (Pixel)	216			Module Row	8	*		
Version Informat	tion							
Current Receivin	g Card	MRV316_V4.5	i.9.0					
						Send to Re	ce	
Cloud server co	nnected	successfully						

Load from local computer

Click Load and select the target configuration file from the local computer.

💀 One-Click Scr	reen Configuration		- 🗆 X
Enter the module	e number/configuration file name	Se	earch Load
Module Informat	tion		
Chip	ICND2055/ICND2059	Scanning Type	1/27 scan
Size	120W×27H	Decoding T	74HC138 Decoding
Parameter Infor	mation		
Refresh Rate:	3660	GrayDepth:	8 Bit
Cabinet Informa	tion		
Width (Pixel)	480	Module Colu	4
Height (Pixel)	270	Module Row	10
Version Informa	tion		
Current Receivir	ng Card MRV316_V4.5.9.0		
			Send to Rece
💦 Cloud server co	innected successfully		

If the file is a module configuration file, you can edit the numbers of module rows and columns. If it is a cabinet configuration file, you cannot edit them.

- Step 4 Click Send to Receiving Card. In the displayed dialog box, select All Receiving Card or specify receiving cards, and click Send.
 - All Receiving Card: Send the receiving card configuration information to all the receiving cards loaded by the current sending card. If you select **Reset the Starting Coordinate of Receiving Card**, the starting coordinates of all the receiving cards will be reset to (0, 0). As a result, all the receiving cards display the top-left image of the input source.
 - Specify Receiving Card: Send the receiving card configuration information to the specified receiving cards by topology or by physical address.

Figure 5-9 Figure 1-3 Sending parameters to receiving card

Send Parameters to Receiving Card	—		×
 All Recei Reset the Starting Coordinate Specify Receiving Card 	Send	Car	ncel

- Step 5 After successful sending, click OK to close the prompt box. The screen is now lighted.
- Step 6 If necessary, click **Advanced** in the bottom-right corner to enter the **Screen Configuration** page and perform more settings for the screen.

On the Screen Configuration page, you can click Back to One-Click Configuration to return to the One-Click Screen Configuration page.

🚽 One-Click Scre	een Configuration		-	
Enter the module	number/configuration file name		Search	Load
Module Informati	ion			
Chip	ICND2055/ICND2059	Scanning Type	e 1/27 sca	an
Size	120W×27H	Decoding T	74HC13	38 Decoding
Parameter Inform	nation			
Refresh Rate:	3660	GrayDepth:	8 Bit	
Cabinet Informat	ion			
Width (Pixel)	480	Module Colu	4	*
Height (Pixel)	270	Module Row	10	* *
Version Informat	ion			
Current Receivin	g Card MRV316_V4.5.9.0			Send to Rece
		For	advanced	<u>Advanced</u>
Cloud server cor	nnected successfully			

5.2.2.2 Loading from File

. .

Applications

Quickly light a screen by loading a receiving card configuration file saved in the local computer.

Applicable Products

All receiving cards

Prerequisites

- The receiving card firmware supports the module chip.
- The necessary file is prepared (.rcfgx/.rcfg).

Related Information

None

Operating Procedure

Step 1 On the Screen Configuration page, click the Receiving Card tab.

ending Card Receiving	Card Screen	Connection						
Module Information								
Chip: C	ommon C	Size:	64W×32H	Scanning Type 1/16 so	an			
Direction: He	orizontal	Data Groups	2	Adjust RG			>>	
Cabinet Information						Set Rota	ation	
Regular				gular				
Width (Pixel)	64 🜲	<=128	Wi	dth: ?? Height: ??				
Height (Pixel)	32 🜲	<=256		ading error. Please try to adjust pe.				
Module Casc								
module Gase	From Right to		Co	View Cabinet	J			
Performance Setting	s							
Data Group E	More Settin	ngs		18bit+				
Refresh Rate	480	V Hz:	Refresh Rate Ti	4 ~				
Grayscale Level	Normal 4096	\sim	Grayscale Mode	Refreshing Rate Fir $$				
Shift Clock Fre	12.5	✓ MHz	Duty Cycle	50 ~ (25~75)	6			
Phase Position	2	\sim	Low Grayscale C.	0				
Row Blanking	25	≑ (=2.00us)	Ghost Control En.	24 🔹 (1~24)				
Line Changing	3	÷ (0~23)						
Minimum OE w	80 ns							
Brightness Effi	68.24%							
							- \	
Smart Settings		Load fro	m File Receiving	Car Save to File Read from	Re	Send to Re	cei	
Current Receiving	MRV316_V	4.5.9.0			R	lestore Fa	icto	
	Restore		p Syste Export Sc	reen M Save System Co	ave	Clo		

- Step 2 Click Load from File and select a configuration file from the local computer.
- Step 3 After successful loading, click OK.

Figure 5-11 Screen configuration

- Step 4 Click Send to Receiving Card. In the displayed dialog box, select All Receiving Card or specify receiving cards and click Send.
 - All Receiving Card: Send the receiving card configuration information to all the receiving cards loaded by the current sending card. If you select **Reset the Starting Coordinate of Receiving Card**, the starting coordinates of all the receiving cards will be reset to (0, 0). As a result, all the receiving cards display the top-left image of the input source.
 - Specify Receiving Card: Send the receiving card configuration information to the specified receiving cards by topology or by physical address.

Figure 5-12 Sending parameters to receiving card

Send Parameters to Receiving Card	_		×
All Recei Reset the Starting Coordinate Specify Receiving Card	Send	Car	ncel

Step 5 After successful sending, click **OK** to close the prompt box. The screen is now lighted.

5.2.2.3 Manual Screen Configuration

5.2.2.3.1 Light Module

Applications

Set the receiving card parameters to light a new module.

Applicable Products

All receiving cards

Prerequisites

- The receiving card firmware supports the module chip.
- The display settings on the PC are completed. For example, display settings on Windows 10 are shown in Figure 5-13 and Figure 5-14. The resolution of PC graphics card must be set to be greater than or equal to the screen resolution based on the actual condition.

Figure	5-13	PC	display	settings	1

Scale and layout						
Change the size of text, apps, and other items						
100% (Recommended) V						
Advanced scaling settings						
Resolution						
1920 × 1080 (Recommended) V						
Orientation						
Landscape \lor						
Multiple displays						
Multiple displays						
Duplicate these displays \checkmark						

Figure 5-14 PC display settings 2

Landscape Multiple displays Duplicate these displays For 5-14 PC display settings 2 For 6 to Destop Destroy Image: Status Image: St	Orientation			
Multiple displays uplicate these displays Figure 5-14 PC display settings 2	Landscape	<u> </u>		
Figure 5-14 PC display settings 2 IMDUC Control Panel File Edit Dexktop Display Help Control Beck - Configure Extranse Control So Settings Configure Extranse Configure Extranse				
WINDIA Control Panel WINDIA Control Panel Windia Castor Display Help Sector Task.	Duplicate these displays	~		
WINDIA Control Panel WINDIA Control Panel Windia Castor Display Help Sector Task.				
File Edit Desktop Display Help Sector a Task Sector a Task Connector: Book Poly - Adjust image settings with preview - Adjust image settings - Display Poly - Adjust image settings - Display Poly Refresh rate: - Display - Display - Display Refresh rate: - Display - Display - Display - Display - Adjust disk posts - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Display - Adjust video radio settings - Display - Display - Display - Display - Display - Display<		;2		
Back Image: Settings Section 1 Task Image: Settings Image: Settings HOMIC: HOTV Image: Setting: Image: Settings Image: Setting: Image: Settings Image: Setting: Image: Setting: Image: Setting: Image: S				- 🗆 X
Secta Tak Descriptions Descri				
⇒ 3D Settings Oddust image settings with preview Manage 3D settings Deplay Configure Surround, PhysX Deplay → Adjust desktop ison settings Adjust desktop isre and position → Setu p dipial audo Adjust video color settings → Adjust desktop size and position 10800, 1920 × 1080 (native) → Setu p dipial audo 10800, 1920 × 1080 (native) → Adjust video color settings Adjust video image settings → Adjust video image settings Note for the following settings → Adjust video image settings Note following settings → Use default color settings Output color depth: ● Use MVIDIA color settings Output color depth: ● Use MVIDIA color format: Output color depth: ● data with preview Setting Settings		2. Choose the resolution.		,
Uselaw Adjust Created display Adjust Created display Verwer HOCP status Set up digital audo Adjust disktop size and position Set up digital audo Adjust disktop size and position Set up digital audo Adjust video color settings Adjust video image settings Customize To enable custom resolutions, turn off Dynamic Super Resolution factors from Manage 30 settings page. 3. Apply the following settings Output color depth: Highest (32-bit) Output color format: Output color depth: Highest (32-bit) Output color format: Output color depth: Highest (32-bit) Output color format: Outpu	3D Settings			ŕ
Adjust video coor settings Adjust video coor settings Adjust video coor settings Adjust video image settings	. Display		and provide the second	
Adjust vides audo Adjust vides audo position Set up multiple displays Video Adjust video image settings Customize Image settings Image settings </th <th>Aajust desktop color settings Rotate display View HDCP status</th> <th>1080p, 3840 × 2160 , HD (4.0 1080i, 3840 × 2160 , HD (4.0</th> <th>10x)</th> <th></th>	Aajust desktop color settings Rotate display View HDCP status	1080p, 3840 × 2160 , HD (4.0 1080i, 3840 × 2160 , HD (4.0	10x)	
Adjust video image settings	Adjust desktop size and position Set up multiple displays	1080p, 1920 × 1080 (native) 1080i, 1920 × 1080		
3. Apply the following settings. Use default color settings Busktop color depth: Highest (32-bit) V Output color format: RGB V Contput dynamic range: Full V Contput dynamic range: RGB V		Customize		
Use default color settings Image: Desktop color depth: Highest (32-bit) Output color format: Output dynamic range: RGB		(i) To enable custom resolution	ns, turn off Dynamic Super Resolution factors from	Manage 3D settings page.
Use NVIDIA color settings Desktop color depth: Highest (32-bit) Use NVIDIA color settings Output color depth: B bpc Use NVIDIA color settings Output color depth: B bpc Use NVIDIA color settings Use NVIDIA color settings Desktop color depth: B bpc Use NVIDIA color settings Desktop color depth: B bpc Use NVIDIA color settings Desktop color depth: B bpc Use NVIDIA color settings Desktop color depth: B bpc Use NVIDIA color settings Desktop color depth: B bpc Use NVIDIA color depth: B bpc		3. Apply the following settings.		
Desktop color depth: Output color depth: Highest (32-bit) 8 bpc Output color format: Output dynamic range: RGB Full		O Use default color settings		
Highest (32-bit) 8 bpc Output color format: Output dynamic range: RGB Full		Use NVIDIA color settings		
Output color format: Output dynamic range: RGB Full				
RGB V Full V		Hignest (32-bit)	8 bpc 🗸	
		RGB 🗸	Full	
System Information Apply Cancel		<		>
	O System Information			Apply Cancel

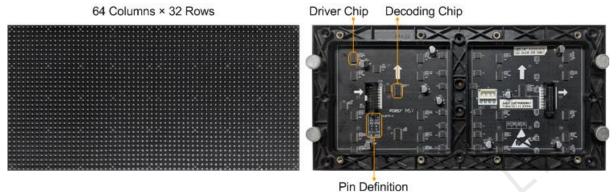
Related Information

The module specifications are provided when the module is shipped. Users can also obtain the specifications from the driver chip, decoding chip and pin definition on the module.

For example, the following information can be obtained from the module shown in Figure 5-15.

- Driver chip: 24 SUM2016GAS2 chips
- Data type: 2 groups of parallel RGB data
- Module type: Regular module
- Pixel quantity: 64 columns × 32 rows
- Decoding chip: 2 SUM74HC138 chips

Figure 5-15 Module example



Both regular and irregular modules are rectangular. If the module column quantity can be divided by 16 without remainder, the module is a regular one.

An irregular module has any of the following features:

- Some output pins of the driver chip are not used.
- The numbers of pixel rows or columns driven by each data group are different.
- The data groups do not drive the pixel rows or columns in order.

Operating Procedure

Step 1 On the Screen Configuration page, click the Receiving Card tab.

	-			.Hub_#000								×	
	Receiving Car	Screen	Conne	ection									
Module Info Chip: Direction:		non C ntal	Siz Da	e: ta Groups	64W×3 2	2H		Scanning Type Adjust RG	1/16 scan			>>	
Cabinet Info	rmation												
Regular											Set Rot	auon	
			1			🗌 🔿 Irreg							
Width (F		÷	1			Wid	th:	?? Height:	??				
Height (Pixel) 32	÷	<=2	56		Loa	ding err	or. Please try to a	adjust pe				
Module	Casc Fr	om Right to	ιv			Cor	struct C	a Viev	v Cabinet				
Destaura													
Performanc		1						18bit+					
Data Gr	oup E	lore Setti	ings										
Refresh F	Rate 48)	\sim	Hz:	Refresh	Rate Ti	4	~					
Grayscal	e Level No	rmal 4096	\sim		Grayscal	e Mode	Refres	hing Rate Fir $ \smallsetminus $					
Shift Cloc	ck Fre 12	5	\sim	MHz	Duty Cyc	le	50	~	(25~75) %				
Phase Po	osition 2		\sim		Low Gra	scale C	0	-					
Row Blar	nking 25		-	(=2.00us)	Ghost C	ontrol En	24	+	(1~24)				
Line Cha	nging 3		-	(0~23)									
Minimum	OE w 80	ns											
Brightnes	ss Effi 68.	24%											
Smart Setti	ngs			Load fro	om File	eceiving C	ar	Save to File	Read from R	s. Se	end to R	ecei	
Current Re	ceiving	/IRV316_	V4.5.9	0.0						Re	store Fa	acto	
		Restor			p Syste	Export Scre		Save System C	o. Sav		Clo		1

Step 2 Click Smart Settings.

Step 3 Select option 1 and click Next.

• Option 1: Enter smart settings.

Figure 5-16 Screen configuration

- Option 2: Load a module configuration file to quickly configure the module.
- Option 3: Load the module configuration file in the cabinet database to quickly configure the module. After the configuration file is loaded, click **Send to Receiving Card**.

Figure 5-17 Smart settings options

Smart Settings Selection	×
Note: (1).Option 1, click 'Next' to begin smart settings! (2).Option 2 or 3; load module information to software.	
Option 1: Make the module on by smart settings Option 2: Load module information from file File Path: Option 3: Load module information from cabin Cabinet Databa Selected Module:	Browse Browse Select Module
View Module Next	Close

Step 4 On the Smart Settings Guide 1 page, set the parameters and click Next.

Figure 5-18 Smart Settings Guide 1

Smart Settin	gs Guide 1					
Module C	Chip 1:					
Module C	Com Com	mon Chip	~	Sele	ect chip type	
-Data Typ	e					
Data Ty	be:	Parallel drive	e			\sim
Module I	nformation					
Module	Гуре		Regula	r Module	O Irre	gular Module
Quantity	of Pixels (virtu	als)	c 32	2	y:	32
Row De	coding Type	[LS9739_C	ommon 🗸	Select	New v
- Working	Mode of Rec	eiving Card				
Hub Mo		Normal	0	20 Gr	🔾 24 Gr	🔘 28 Gr
Ghost C	ontrol Signal) High	ΟL	ow	
					Next	Cancel

- Module Chip: Select the type of module driver chip. You can click **Select chip type** to open the chip table and select the desired chip. If the table does not have the type of chip you want, select **Common Chip**.
- Data Type: Select the data type of the module. Parallel data indicates that the data of the RGB three colors is transmitted parallelly, but serial data indicates that the data of the RGB three colors is transmitted serially.
- Module Type: Select the module type. Module type includes regular and irregular modules.
- Number of Driver Chips for One Scan and One Color: This parameter is available when irregular module is selected. It is calculated by the following formula.

Number of driver chips for one scan and one color = Number of driver chips / Number of data groups / Number of colors

- Quantity of Pixels: Set the quantity of pixel columns and rows on the module.
- Row Decoding Type: Select the row decoding type of the module. You can click Select a decoding type to
 open the decoding type table and select the desired type. When the Parity Scan option is displayed, if only the
 odd or even output of the decoding chip is used, please select this option.
- Hub Mode: Use the default value.
- Ghost Control Signal Polarity: Use the default value.

Step 5 On the Smart Settings Guide 2 page, select one option based on the current display on the module and click Next.

When you are viewing the display on the module, view the first module loaded by the first receiving card connected to the first Ethernet port.

Figure 5-19 Smart Setti	ngs Guide 2
Smart Settings Guide 2	x
The current display modu	le is:
Full Black	O Display
	Back Next Cancel

Step 6 On the **Smart Settings Guide 3** page, select the module display color switching mode and check whether the current module display color is the same as the selected color.



Figure 5-20 Smart Settings Guide 3

Smart Set	ttings Guide 3	x
Auto	omatic switchin 🔘 Manual switch	in
Please	select the module color in each status:	
● 1	Red A	~
O 2	Green	~
O 3	Blue	~
04	Red B or black	~
	Back Next	Cancel

- If they are the same, click **Next** to go to Step 7.
- If they are different, select a color corresponding to the module display color from the drop-down list to make them the same.
- Step 7 On the Smart Settings Guide 4 page, set the parameters based on the number of lighted rows (or columns) on the module and click Next.

Figure 5-21 Smart Settings Guide 4	
Smart Settings Guide 4	
Lighted rows (or columns) on the module	
Row Column	
Number of lighte 16	\circ
Back Next Cancel	

Step 8 On the **Smart Settings Guide 5** page, set the parameters based on the number of lighted rows (or columns) on the module and click **Next**.

Figure 5-22 Smart Settings Guide 5

Smart Settings Guide 5
Lighted rows (or columns) on the module Quantity
Back Next Cancel

Step 9 On the **Smart Settings Guide 6** page, view the flashing pixel in the first row on the module and click the corresponding cell in the grid to draw the pixel position.

Generally, you only need to draw pixel position for the first row of pixels. If the flashing pixels are on the other row or column, click the corresponding cells in the grid.

- Automatic Generation: Complete pixel position drawing for the first row of pixels quickly.
- Cancel: Clear the last pixel position drawing.
- Clear: Clear all the pixel position drawing.

• Lighted Pixels: Display the total number of lighted pixels on the current module.

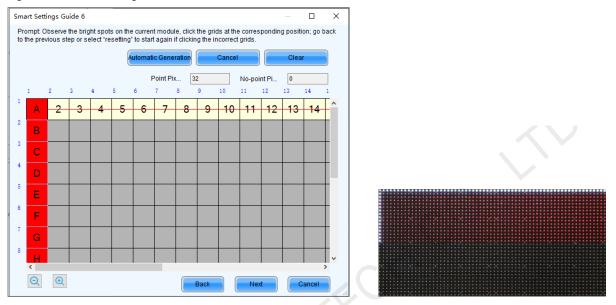
www.novastar.tech



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- Unlighted Pixels: For regular modules, the value of this parameter is always 0. For irregular modules, a No corresponding LED button is added to the page shown in Figure 5-23. When a pixel cannot be lighted during pixel position drawing, you can click No corresponding LED and the number of Unlighted Pixels increases by 1.
- 🔍: Zoom out the grid.
- 🔍: Zoom in the grid.

Figure 5-23 Smart Settings Guide 6



Step 10 View the flashing pixel in the first column on the module and click the corresponding cell in the grid to draw the pixel position (You can also use the keyboard arrow key to quickly draw the position), and click **OK** after the drawing is done.

Generally, you only need to draw pixel position for the first column of pixels. If the flashing pixels are on the other row or column, click the corresponding cells in the grid.

- Step 11 Click Next and click OK.
- Step 12 (Optional) Enter a module name and save the module configuration as a file or save the module configuration to the cabinet database.

In the future, you can load the module configuration file to quickly light the modules with the same specifications.

- Browse: Select the path to save the module configuration file.
- Change Cabinet Database: Open or create a cabinet database.
- View: View the module configuration file saved in the cabinet database.
- View Module: View the detailed information about the current module.

Figure 5-24 Saving module information

Save Module Information	×
Prompt: You can save module information to file or cabinet database for direct loading next time. Module Name:	
 Option 1: Save module information to file 	owse
O Dption 2: Save module information to cabi Cabinet Datab	i ew
View Module Save Comple	te

Step 13 Click Complete.



Notes

On the **Receiving Card** tab page, you can also perform the following operations.

- In the Module Information area, click it to view the detailed module information. On the Details of Module page, click Save Module to save the module configuration as a file.
- Click **Restore Factory settings** to reset the configuration information of all or specified receiving cards to factory settings.
- Type "admin" to show the **Save to factory area** button. This button is used to save some parameters to the factory area before delivering the cabinets to users. This function is supported only by some receiving cards.

5.2.2.3.2 Set Cabinet

Applications

Set the size of the cabinet loaded by the current receiving card and the cascading direction of the modules in the cabinet.

Applicable Products

All receiving cards

Prerequisites

- A module is lighted. For details, see 5.2.2.3.1 Light Module.
- If the cabinet is irregular, the cabinet database file (.mcl) or module configuration file (.module) is prepared.

Related Information

If a cabinet is rectangle and the specifications of all the modules are the same, the cabinet is a regular cabinet, otherwise it is an irregular cabinet. For an irregular cabinet, the configuration file must be used to construct the cabinet.

Operating Procedure

- Step 1 On the Screen Configuration page, click the Receiving Card tab.
- Step 2 In the Cabinet Information area, perform the corresponding operations below based on the cabinet type.

Figure 5-25 Cabinet information

Cabinet Information	Set Rotation
Regular	O Irregular
Width (Pixel) 128 ✓ <=128	Width: ?? Height: ?? Loading error. Please try to adjust pe
Module Casc From Right to L 🗸	Construct Ca View Cabinet

Configure regular cabinet

Select Regular, set the cabinet width and height, and set the cascading direction of modules.

• Configure irregular cabinet

- a. If you need to configure row extraction position, select **Big Control Mode**. If **Big Control Mode** is not displayed or you do not need to configure row extraction position, skip this step.
- b. Select Irregular, click Construct Cabinet to open the dialog box shown in Figure 5-26.
- c. If you have a cabinet configuration file (.mcl/.cabinet), click **Load** to configure the cabinet quickly. If you do not have the file, preform the subsequent operations to manually configure the cabinet.
- d. Set **Data Groups of Cabinet** according to the number of data groups actually used by the cabinet and click **Set**.
- e. Click From Cabinet Database or From File to load modules.



When loading modules from files, you can set the numbers of module rows and columns. The loaded modules support the Ctrl+C, Ctrl+V, Ctrl+A, Delete, Ctrl+Z and Ctrl+Y keyboard shortcuts.

f. Adjust the positions of modules to let them form a cabinet whose size is consistent with the actual cabinet size.

You can adjust the module positions by directly dragging the modules or using the functional buttons in the **Module Alignment** and **Module Spacing** areas. Currently, the position adjustment operations cannot be undone.

g. Select the data group one by one and double click the corresponding modules to connect them.

When selecting the data group, you can click the **A** key or **D** key on the keyboard to switch data groups.

After you double click the module, the module number is displayed. For example, (2, 2) indicates the module is the second module of the second data group. Right clicking the module can cancel the connection.

Functions in the **Quick Operation** area allow you to quickly number the selected modules and you do not need to select data group first. The module positions after numbering may change and you can adjust them if necessary.

h. Select **Simple Mode** or **Advanced** and configure one or more row extraction positions. If **Big Control Mode** is not selected on the **Receiving Card** tab page, skip this step.

Simple Mode: Set the row extraction position of cabinet and click **Add**. For example, if you set the parameter to **2**, the second row in the cabinet will be extracted during row extraction and the second column will be extracted during column extraction.

Advanced: Set the row extraction position of module and click **Add**. For example, if you set the three parameters to **2**, the second row in the second cascaded module connected to the second data group will be extracted during row extraction and the second column in the second cascaded module connected to the second data group will be extracted during column extraction.

- i. After the configurations are done, click **OK**. If necessary, click **Save** to save the cabinet configuration information to the cabinet database or save the information as a file.
- j. (Optional) Click View Cabinet to view the cabinet information.

Construct Irregular-Cabinet × Data Groups of Cabinet Module Alignment Module Spacing Zoom Cabinet Information Center Vertical O Horizontal Align Left Alian Ria Quantity of... 0 1 ÷ ame Space Clear Space Cabinet Si... 0×0 Add Module From Cabinet D... From File Delete Module Delete the Selec.. Clear Module Operation of Data Groups Delete Clea 1 Quick Operation Sorting Rules Vertical. O Horizont Operation Rules O Module. O Data or. Data Row Extracting Location in C Simple Mode Advanced Number of Data Rows 1 ÷ Module Information OE Driver Chip Delete Clear Encoding Four-color Parameters Data Total Quantity of Pixels Scanning Scanning Line Load Cance Short-Key prompts

Figure 5-26 Constructing irregular cabinet

Step 3 If cabinet rotation is required, click **Set Rotation** and select the rotation angle. If it is not required, skip this step.

After cabinet rotation is set, all the input sources will be rotated to display according to the set angle.

- Step 4 After the settings are done, click **Send to Receiving Card**. In the displayed dialog box, select **All Receiving Card** or specify receiving cards, and click **Send**.
 - All Receiving Card: Send the receiving card configuration information to all the receiving cards loaded by the current sending card. If you select **Reset the Starting Coordinate of Receiving Card**, the starting coordinates of all the receiving cards will be reset to (0, 0). As a result, all the receiving cards display the top-left image of the input source.
 - Specify Receiving Card: Send the receiving card configuration information to the specified receiving cards by topology or by physical address.

Figure 5-27 Sending parameters to receiving card

Send Parameter	s to Receiving Card	_		×
 All Recei Specify Receivities 	☐ Reset the Starting Coordinate ng Card	Send	Ca	ncel

- Step 5 After successful sending, click **OK** to close the prompt box. The screen is now lighted.
- Step 6 (Optional) Click **Save to File** to save the configuration information as a receiving card configuration file (.rcfgx), or click **Receiving Card is configured with U disk file** to save the information as a USB drive file (.bin).

5.2.3 Step 3 Connect Screen

Applications

Connect the receiving cards logically. Generally, one receiving card loads one cabinet. Therefore, this function is also called connecting cabinets.

Applicable Products

- Configuration of standard screen: Applicable to all sending cards
- Configuration of complex screen: The DVI connector of the MCTRL1600 cannot be used to configure a complex screen. You must use its DP 1.2 connector. The E8000 cannot be used to configure a complex screen.

Prerequisites

None

Related Information

In NovaLCT, you can configure up to 20 screens.

To configure a complex screen efficiently, you are advised to configure a standard screen first and then configure the complex screen based on the standard screen.

Operating Procedure

- Step 1 On the Screen Configuration page, click the Screen Connection tab.
- Step 2 Set the screen quantity and click **Configure**.

If the multiple output ports of the sending card load the different areas of the same screen, set the screen quantity to **1**. If the multiple output ports of the sending card load different screens, set the screen quantity to the number of screens loaded.

Step 3 On the **Standard Screen** page, set the column and row quantity of receiving cards. For example, set them to 10 columns and 5 rows respectively, as shown in Figure 5-28.

creen Configuration-USB@Port_#0003.Hub_#0	0001						-	
ending Card Receiving Card Screen Connection								
						Quantity o	1 ~	Configur
Screen1							_	
Screen Type: Standard Screen 	○ Co	mplex Screen						
Sending Card Number	Basic Info	rmation						
1	Coordina	te: X: 0	Y: 0 Virtu	al Mo 🗌 E	🌅 🗆 Ena	abl Screen Ar	r 1920 x	1080
Ethernet Port No.	Columns	10 R0	ws 5	ResetAll	Hided Rec	• v 🏡 🗲	5	
1 2 3 4	Conditinito							
5 6		1 Sending Card:	2 Sending Card:	3 Sending Card:	4 Sending Card:	5 Sending Card:	6 Sending Card:	7 ^ Sendi
5 0	▶ 1	Port:	Port:	Port	Port:	Port:	Port:	F
	▶ 1	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Rec C
Receiving Card Size		Width:0	Width:0	Width:0	Width:0	Width:0	Width:0	Wi
Width: 64 🗢 Apply to Entir		Sending Card: Port:	Sendi F					
Height: 32 🖨 Apply to Entir	2	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Rec C
Set Blank Apply to the current.		Width:0	Width:0	Width:0	Width:0	Width:0	Width:0	Wi
Quick Connection		Sending Card: Port:	Sendi					
	3	Receiving	Receiving	Receiving	Receiving	Receiving	Receiving	Rec
2 미 드 띠		Card: Width:0	Card: Width:0	Card: Width:0	Card: Width:0	Card: Width:0	Card: Width:0	C Wi
		Sending Card:	Sendi					
드미근미	4	Port: Receiving	Port: Receiving	Port: Receiving	Port: Receiving	Port: Receiving	Port. Receiving	F Rec
فغا لمصا لمغة المصا		Card: Width:0	Card: Width:0	Card: Width:0	Card: Width:0	Card: Width:0	Card:	
	<	- Winteri		Winth II	Width U	MULTIN	A Milan II	>
1	Zoom: <		>	1 Note: (Click or dr	ag the left	mouse but	ton t
Detect Communic			Enab	le Mapping Loa	d from File	we to File Rea	ad from HW	end to HW
Restore Factor.		(store Syste Ba	ck Up Syste Ex	port Screen M	Save System Co	Save	Close

Step 4 Choose an output port.

Set the receiving card size (loading capacity) and connection. For example, Figure 5-29 illustrates setting of the Step 5 receiving cards loaded by output port 1.

- Custom connection: In the table, click or drag the mouse.
- Quick connection: Click a connection pattern and drag the mouse to select an area in the table.

During connection, the loading capacity of all the receiving cards is the value you set by default. If necessary, you can change the width and height of the loading capacity on the left.

Right clicking a receiving card cancels the configuration of the card.

nding Card Receiving Card Screen Connection											
sreen1										Quantity o 1	~ Config
Screen Type: Standard Screen	00	omplex Screen									
Sending Card Number	Basic Info	ormation									
1	Coordina	ite: X: O Y	0 Virtual	Mo 🗆 E 📍	📑 🗌 Enabl	Screen Ar	920 x 1080				
Ethemet Port No.	Columns	s 10 Row	/s 5	ResetAll 🗌 H	ided Red 🗸	☆ ← 5)				
		1	2	3	4	5	6	7	8	9	10
5 6 7 8		Sending Card:1 Port:1	Sending Card: Port:	Sending Card: Port:	Sending Card: Port	Sending Card:1 Port:1	Sending Card: Port:				
9 10 11 12	▶ 1 · · ·	Receiving Card.S	Receiving Card: Width:0	Receiving Card: Width:0	Receiving Card: Width:0	Requing Cart:13	Receiving Card: Width:0				
13 14 15 16 v		Width:64	Height:0	Height0	Height:0	Width:64	Height0	Height:0	Height:0	Height0	Height:0
Receiving Card Size		Sending Card:1 Port1	Sending Card:1 Port:1	Sending Card: Port:	Sending Card: Port:	Sending Card:1 Port:1	Sending Card: Port:				
Width: 64 🖨 Apply to Entir	2	Receiving	Receiving	Receiving Card:	Receiving Card:	Receiving	Receiving Card:				
Height: 32 😫 Apply to Entir		Card:4 Width:64	Card 6 Width:64	Width:0 Height:0	Width:0 Height:0	Card:12 Width:64	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0
Set Blank Apply to the current.		Sending Card:1 Port:1	Sending Card:	Sending Card:1	Sending Card:	Sending Card:1 Port:1	Sending Card:				
Quick Connection	3	Receiving	Port: Receiving Card:	Receiving	Port: Receiving Card:	Receiving	Port: Receiving Card:				
		Cald:3 Widh:64	Width:0 Height:0	Card. Width:64	Width:0 Height:0	Card:11 Width:64	Width:0 Height0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0
		Sending Card:1	Sending Card:	Sending Card:	Sending Card:1	Sending Card:1	Sending Card:				
	4	Pot1 Receiving	Port: Receiving Card:	Port: Receiving Card:	Port:1 Receiving	Pot:1 Receiving	Port: Receiving Card:				
<u> 5 N 2 N</u>		Cald:2 Width:64	Width:0 Height:0	Width:0 Height:0	Card.8 Width:64	Card:10 Width:64	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0
		Sending Card:1	Sending Card:	Sending Card:	Sending Card:	Sending Card:1	Sending Card:				
	5	Po <mark>t</mark> 1 Rec <mark>S</mark> ring	Port: Receiving Card:	Port: Receiving Card:	Port: Receiving Card:	Pot:1 Receiving	Port: Receiving Card:				
		Card:1 Width:64	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Card:9 Width:64	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0	Width:0 Height:0
		1121264/00	THOIGHTO	Therginico	Therginco	1121212-000	THOUGHILD	Therginco	rieignico	THOIGHED	Theighteo

Figure 5-29 Receiving card connection and size

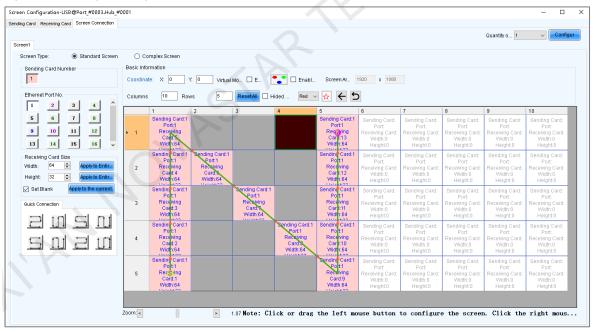
- Apply to Entire Column: Apply the loading capacity width of the selected receiving card to all the receiving cards in the same column.
- Apply to Entire Row: Apply the loading capacity height of the selected receiving card to all the receiving cards in the same row.
- Apply to the Current Port: Apply the current loading capacity width and height to all the receiving cards connected to the current output port.
- Reset All: Reset all the receiving card connections and blanks.
- Hided Mapping Line: Hide the receiving card mapping line (namely the connections).
- Mark the receiving card.
- Exeturn to the previous step of connection.
- D: Clear all the connections of receiving cards connected to the current output port.
- Zoom: Zoom in or out the receiving card interface in the middle. When the interface is large enough, cabinet related information is displayed.
- Step 6 Set the specified receiving cards blank and set the blank size, as shown in the example in Figure 5-30. If you do not need to set blank, skip this step.

Click a receiving card and select **Set Blank** to leave the position of that receiving card blank. Continue clicking or dragging the mouse on the empty cabinets to set blank on the other positions.

The receiving cards that are left blank do not load the screen to display the image, which helps to realize configuration of complex screen.

The blank size must be set based on the loading capacities of the neighbor receiving cards. For example, the display effect of both connection lines in Figure 5-31 is N shape. The two areas in orange are loaded by the neighbor receiving cards. Therefore, their blank size is set to 0.

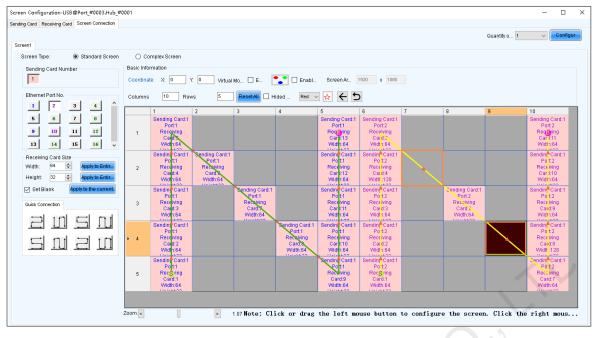
Figure 5-30 Setting receiving card blank



Step 7 Repeat Step 4 to Step 6 to set the receiving cards loaded by the other output ports.

For example in Figure 5-31, the receiving cards connected by the green line are loaded by output port 1 and the receiving cards connected by the yellow line are loaded by output port 2.

Figure 5-31 Configuration completed



Notes

To configure a complex screen efficiently, you are advised to configure a standard screen first and then configure the complex screen based on the standard screen by following the operations below.

After the standard screen is configured, select **Complex Screen**. The **Complex Screen** page shows the connection diagram of the standard screen. The connection diagram in Figure 5-31 is shown as the diagram in Figure 5-32.

You can directly drag cabinets on the left or adjust data in the table on the right to let the configuration meet the actual screen configuration requirements.

Screen Configuration-USB@Port_#0003.Hub_#0001						-		×
Sending Card Receiving Card Screen Connection								
		C	uantity	o 1		~	Configu	r
Screen1								_
Screen Type: O Standard Screen Complex Screen								
Red 🗸 📩 Hided								
Receiving Card Settings								
10p 20p 30p 40p 50p 60p	Send	Port	Recei	Startir	Startir	Width	Hei ^	
= 1-1-5 1-1-13 1-2-5 1-1-11	Card	_	Card	Х 0	Y			
(0·0) (25-0) (320 (57-0)	1	1	1 2	0	128 96	64 64	32 32	
1-14 1-16 - (0. 32) (64. 33) (256 32) (32. 32) (32. 32)	1	1	2 3	0	90 64	64	32	
- 1-1-3 - (0. 64) (128. 60, (256 64) (320 64) (448. 51) (51. 64)	1	1	4	0	32	64	32	
- 12 (0. 96) (192) 56 (256 96) (320 96) (122 96)	1	1	5	0	0	64	32	
1-1 (6. 28) (256, 128) (226, 128) (576, 128)	1	1	6	64	32	64	32	
	1	1	7	128	64	64	32	
2	1	1	8	192	96	64	32	
	1	1	9	256	128	64	32	
	1	1	10	256	96	64	32	
	1	1	11	256	64	64	32	
	1	1	12	256	32	64	32	
<u> </u>	1	1	13	256	0	64	32 ~	
< Zoom	<						>	1
Virtual M Enable		Add) E	dit 🔵	Delet	e) [-	Clear	
Detect Communic. Read the Number Load from	m File	ave to F		Read for	om HW		nd to HV	v
		ave to r		teau in				
Restore Factor Restore Syste Back Up Syste Export S	Screen M	Save S	ystem C	20	Save		Clos	е

Figure 5-32 Configuration of complex screen



Step 8 Click **Send to HW** to send the configuration information to the hardware. If necessary, click **Save to File** to save the configuration information as a file.

Empty cabinets cannot exist before saving configuration. You can set the empty cabinets blank.

- Step 9 After the settings are done, click Save to save the configuration information to the hardware.
- Step 10 After successful saving, choose whether to save the screen monitoring backup file to the local computer.

When the control computer can access the Internet, you can use the backup file to register screens to VNNOX Care. For details, see 7.1.2.1 Register by Using Local Backup Files (Recommended).

This step is related with the configuration of the save function. See 11.1 Configure the Save Function.

Figure 5-33 Successful saving

i	Information saved to hardware successfully. Do you want to back up the screen monitoring parameters?	
-	OK Cancel	

Related Operations

- Detect Communication Status: Detect the status of connection between the receiving card and Ethernet port.
- Read the Number of Receiving Cards: Read the number of receiving cards connected to the current Ethernet port.
- Enable Mapping: Enable the Mapping function. The Mapping function is used to display the cabinet No. and the Ethernet port the cabinet is connected to on the cabinet. In this way, you can obtain the connection information.
- Read from HW: Read the current configuration information in the hardware.
- Coordinate: Set the start position of the display image on screen.
- Virtual Mode: Set the layout of LEDs.
- Enable Sync: Used for the mosaic function of the all-in-one device
- Back Up System Configuration: Back up some system configurations, sending card configurations and receiving card configurations to the local computer. This button is available for the MCTRL660 PRO device only.
- Restore System Configuration: Use the backup file (.pbk) to restore the system configurations, sending card configurations and receiving card configurations. This button is available for the MCTRL660 PRO device only.

5.2.4 Step 4 (Optional) Save Configuration Files

Applications

After the screen configuration is done, save the configuration file of the online screen to the cloud (VNNOX Care) and the local computer, or save the configuration file of the offline screen to the local computer.

Applicable Products

All receiving cards and sending cards

Prerequisites

To save the configuration files to the cloud, the following conditions must be met:

- You have a valid VNNOX Care account.
- The control PC is connected to the Internet.

Related Information

When saving the configuration files of a screen that is not registered with the cloud, the screen will be registered with VNNOX Care automatically. During registration, NovaLCT will automatically enable **Automatic Refresh** and **Link to NovaiCare** in the monitoring configuration. If you want to set the refresh period, please see 7.2.1 Monitoring.



The configuration files saved to the cloud include the receiving card configuration file (.rcfgx), screen connection file (.scr), version file (.cfg), etc. The version file contains the version information about NovaLCT and the receiving card program package.

The configuration files saved to the local computer include the system configuration file (.scfg) only.

Operating Procedure (Online Screens)

Step 1 On the Screen Configuration page, click Save System Configuration File to open the dialog box shown in Figure 5-34.

💀 Save System File	s to Cloud	×
VNNOX Care Use		
Password		
Screen Name	USB@Port_#0002. Hub_#0001-S	creen1
System Config		
System Config	1 . Receiving card backup fi	ile
	2. Screen connection file	
	3、Receiving card/NovaLCT .	
	Save	
🖪 The screen is no	ot registered Americ	an 🔻

Figure 5-34 Saving configuration files (online screen)

- Step 2 Enter your VNNOX Care user name and password, set the screen name and system configuration file name, and select a server node.
- Step 3 After the parameter settings, click Save.
- Step 4 After successful saving, close the prompt box.

Operating Procedure (Offline Screens)

Step 1 On the Screen Configuration page, click Save System Configuration File to open the dialog box shown in Figure 5-35.

As					×
→ × ↑ 🖹 > Th	is PC > Documents	5 V	Search Documer	nts	Q
anize 🔻 New folde	er				?
🕨 Downloads 🛛 🖈 🐴	Name	Da	te modified	Туре	^
🗄 Documents 🖈	Adobe	0/	29/2018 5:05 PM	File folder	
Pictures 🖈	Custom Office Templates		/11/2019 7:18 PM	File folder	
0624 F8	Nova Star		15/2019 5:49 PM	File folder	
en-US	NovaCLB		14/2019 8:29 PM	File folder	
System32	NovaLCT 2012	7/	2/2021 2:01 PM	File folder	
Jystemsz	Pixelhue	5/	7/2019 3:22 PM	File folder	
	QQPCMgr	1/	16/2019 1:44 PM	File folder	
OneDrive	SDL	8/	19/2019 10:55 AM	File folder	
This PC	📊 Snaglt		1/2020 12:08 PM	File folder	
- ····································	Studio 2019	12	/2/2019 9:33 AM	File folder	>
N					
File name:					
Save as type: Syster	n configuration file(*.scfg)				~
			Save	Cancel	
lide Folders			Save	Cancel	
Primary Sending Card	Serial Number of Primary Port	Backup Sending Card	Serial Nu Backu		
			CCX		
Refresh Ser	nd	Add	Edit	Delete	

Figure 5-35 Saving configuration files (offline screen)

Step 2 Select a location from the control PC and click Save.

Step 3 After successful saving, click **OK** to close the prompt box.

5.3 Set Redundancy

Applications

Set device redundancy and Ethernet port redundancy to ensure high reliability of the control system in applications like stage and conference center.

Applicable Products

- Redundancy: Applicable to all sending cards
- Hot backup verification: Applicable to the MCTRL4K, MCTRL R5 and KT8 sending cards

Prerequisites

Redundancy related hardware connection is done. The devices are cascaded before you set device redundancy and Ethernet port redundancy between devices.

Related Information

Use the hot backup verification function to directly verify effectiveness of backup Ethernet ports without disconnecting and reconnecting Ethernet cables.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK.

The default password is "admin".

Step 2 Click screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-36.

Figure 5-36 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	COM99 ~	
Configure Screen		
O Cloud Restore	~	
 Local Restore 	Browse	
	Next Close	

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Sending Card tab page, perform any of the following operations as required.
 - Configure device redundancy
 - Set a single device

Select Set as Primary or Set as Backup to set the current device as the primary or backup device.

Set the Current Devi Set as Primary	Set as Backup
Redundancy	

- Set multiple devices

Click Set in the Redundancy area to open the Redundancy settings dialog box. Then, select Set as Primary or Set as Backup. At last, select the sending cards you want to set and click Set.

	Redundancy settings		\times
	Set as Primary	○ Set as Backup	
	Sending Card:	📔 Primary 📵 Backup 🝔 Not set	
	P 🗸 Sending Card1		
	 ▶ Sending Card2 ▶ Sending Card3 		
	📔 🗹 Sending Card4		
	📔 🗹 Sending Card5		
		Set Cancel	

Notes

To set a single backup device as the primary device, deselect **Set as Backup** first, send the settings to the hardware and then select **Set as Primary**.

The sending card that is used in the completed screen configuration cannot be set as backup device. To set it as backup device, you must delete the screen configuration information first.



Configure Ethernet port redundancy

a. Click Add to open the Redundancy Settings dialog box.

lundancy Settings	
Serial Number of Primar 1 🜩 Serial Number of Primar 1 🜩	Serial Number of Backu 1 文 Serial Number of Backu 2 文
Add	Close

b. Enter the serial numbers of the sending cards and output ports, and click Add.

For Ethernet port redundancy within a sending card, enter the same value for serial numbers of the primary and backup sending card. For Ethernet port redundancy between sending cards, enter the actual serial numbers of the primary and backup sending cards after they are cascaded.

- c. After the configurations are done, click Close.
- Step 6 (Optional) After Ethernet port redundancy is configured, perform the following operations to verify hot backup.
 - 1. Click Verify to open the dialog box shown in Figure 5-37.
 - 2. Select the sending card and click **Enable Hot Backup Verification**. If the display is normal, the backup Ethernet port is effective, otherwise it is not.
 - 3. After verification, click **OK**.
 - 4. Click **Disable Hot Backup Verification** and click **OK**.
 - 5. Close the Hot Backup Verification dialog box.

Figure 5-37 Hot backup verification

🖷 Hot Backup Verification	×	
Select sending cards for hot backup verification		
Sending		
After hot backup verification is enabled, if the display is correct, the hot backup takes effect. If the display is wrong, please chec		
Enable Hot Backup Cancel		

Step 7 Click **Send** to send the configuration information to the hardware, or click **Save** to save the information to the hardware.

Step 8 After successful saving, choose whether to save the screen monitoring backup file to the local computer.

When the control computer can access the Internet, you can use the backup file to register screens to VNNOX Care. For details, see 7.1.2.1 Register by Using Local Backup Files (Recommended).

This step is related with the configuration of the save function. See 11.1 Configure the Save Function.

Figure 5-38 Successful saving

1	Information saved to hardware successfully. Do you want to back up the screen monitoring parameters?	
	OK Cancel	

5.4 Enable 3D

Applications

Enable the 3D function and set the related parameters to let users wearing 3D glasses enjoy stereoscopic images.

Applicable Products

The MCTRL4K, MCTRL1600, KT8, KT8E, KT16E, KT16C, MEE200 and MEE400 sending cards, and H series products

Prerequisites

The 3D and low latency functions cannot be enabled at the same time. The low latency function must be disabled before enabling 3D function.

The hardware connection is done and the 3D glasses are prepared.

Related Information

After the 3D function is enabled, the loading capacity of the sending card is reduced by half.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK.

The default password is "admin".



Step 2 Click screen configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-39.

Figure 5-39 Screen configuration method

Screen Configuration			×
-Select Communication	Port	_	
Current Operatio	COM99	~	
Configure Screen			
O Cloud Restore		~	
O Local Restore		Browse	
7	Next	Close	

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Sending Card tab page, select Enable in the 3D Function area.

Figure 5-40 Enabling 3D

- Select Input Source				
Video Input			3D Function	
🗌 Automati	HDMI	Send	🗹 Enable	Settings

Step 6 Click Settings next to Enable to open the dialog box shown in Figure 5-41.

et 3D Parameters			×
Video Source Format			
🔘 Side-by-side 🛛 💿 Top-ar	nd-bottom 🔿 Frame se	equential	
Eye Priority			
● Right eye ○ Left e	≥ye		
Mode Selection			
IVI			
● DVI1: L DVI2:	R		
-3D signal emitter			
🗌 Enable third-party emitter			
Signal Delay Time			
7 🔹 ms 0 🜲 us (R	ange: 0-20 ms) Restore De	efa	
Please set an appropriate delay	time to make left and rig	ht eye	
		-	
Save	Load from File	Save to File	e

Figure 5-41 Setting 3D parameters

Step 7 Click Load from File to quickly configure the related parameters, or configure them manually.

- Video Source Format: Set the format of the video source to side-by-side, top-and-bottom or frame sequential according to the format of the used video source.
- Eye Priority: Set which image is sent first, the left eye image or the right eye image. Wear the 3D glasses and watch the display. If the display is abnormal, set the parameter value to the other one. If the display is normal, the setting is done.
- Mode Selection: Select the same or different signal sources for the left and right eye images. If there is only one
 input source, this parameter is not displayed.
- Right Eye Start: Set the start position of the right eye image. When the video source format is side-by-side or top-and-bottom and the left and right eye images are provided, this parameter can be set.
- 3D signal emitter: If you use a third-party 3D emitter, select **Enable third-party emitter**. If you use the EMT200 emitter of NovaStar, do not select it.
- Signal Delay Time: Set the delay time of sending the synchronization signal from 3D signal emitter to the 3D glasses. This setting ensures that the switching between left and right eye images of the 3D glasses is in sync with the switching between the left and right images on the display. This parameter is applicable to both the NovaStar and third-party emitters.
- Step 8 After the configurations are done, click **Save** to save the configuration information to the hardware.

The 3D parameters take effect on the hardware immediately after they are configured. If they are saved to the hardware, they will not be lost even after the device is powered off.

Step 9 (Optional) Click Save to File to save the configuration information as a file on the local computer.

5.5 Set Working Mode

Applications

Set the working mode to let the device switch to the sending card mode (also known as video controller mode) or the fiber converter mode.



Applicable Products

The MCTRL660 PRO, MCTRL1600, H9, NovaPro UHD Jr, K16, and MCTRL R5 sending cards

Prerequisites

None

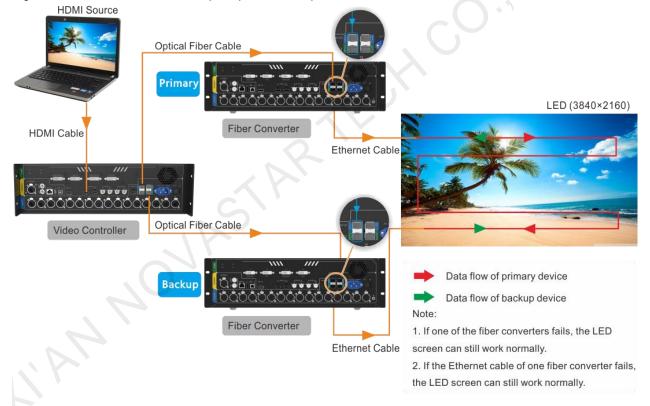
Related Information

For the MCTRL1600, H9, NovaPro UHD Jr and K16, after their working mode is set to sending card mode, you can further set the working mode of their optical ports. The working modes of optical port include hot backup mode and copy mode.

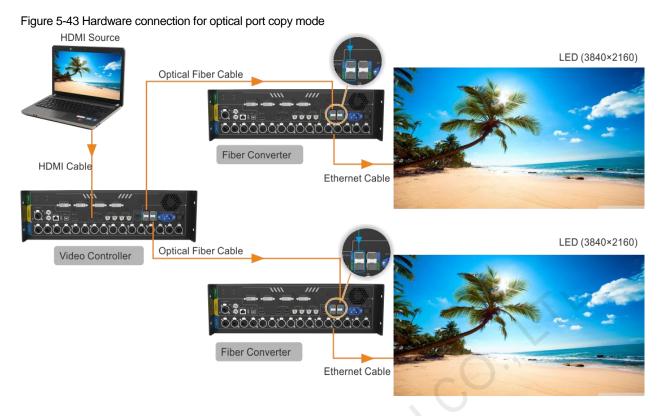
Figure 5-42 and Figure 5-43 are illustrations of the two optical port working modes, using the NovaPro UHD Jr as an example.

- Hot backup mode: The sending card sends the two duplicate optical signals to the same display through the primary and backup fiber converters to form a loop backup.
- Copy mode: The sending card sends the two duplicate optical signals to two displays through two fiber converters.

Figure 5-42 Hardware connection for optical port hot backup mode







Operating Procedure

- Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".
- Step 2 Click screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-44.

Figure 5-44 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	СОМЭЭ ~	
Configure Screen		
O Cloud Restore	~	
O Local Restore		Browse
	Next	Close

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Sending Card tab page, click Set Working Mode.

Figure 5-45 Working mode

Verify Working Mode Set Working	
---------------------------------	--

Step 6 Select the sending card and set the working mode to sending card mode or fiber converter mode.



Figure 5-46 Setting working mode

Set Working Mode		×
Select Sen	Workina Mode	
SelectAll		
🗹 Sending Card1	Sending Card	○ Fiber Converter
	Working Mode of Opt	ical Port
	Please select 🔍	·
		OK Cancel

- Step 7 For the MCTRL1600, H9, NovaPro UHD Jr and K16, after their working mode is set to sending card mode, if necessary, set the working mode of their optical ports.
- Step 8 Click OK.

5.6 Enable Zoom

Applications

Enable the zoom function and set the output resolution to let the image be displayed in a specified size.

Applicable Products

The KT8E, KT16E, KT16C, MEE200 and MEE400 sending cards

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

```
Step 2
```

Click screen configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 5-47.

Figure 5-47 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	COM99 ~	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse)
	Next Close	



- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 Click the Sending Card tab.
- Step 6 Select Enable zoom and click OK.

Figure 5-48 Enabling zoom	
Output Reso 0 🔄 x 0 🔄 Px Set	Enable Zoom

Step 7 Set the output resolution.

Step 8 Click Set and click OK.

5.7 Set Performance Parameters

Applications

Set the performance parameters of the cabinet to let the screen present better display effect.

Applicable Products

All receiving cards

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".

Step 2 Click Screen Configuration from the menu bar to open the dialog box shown in Figure 5-49.

Figure 5-49 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	COM99 ~	
Configure Screen		
Cloud Restore	~	
O Local Restore	Browse	
	Next Close	

- Step 3 Choose a communication port.
- Step 4 Select **Configure Screen** and click **Next**.

Step 5 Click the **Receiving Card** tab and click **Read from Receiving Card** to obtain the latest configuration information.



- Step 6 If you have a receiving card configuration file (.rcfgx/.rcfg), click **Load from File** to complete the configuration quickly. If do not have the file, preform the subsequent operations to manually configure the performance.
- Step 7 In the **Performance Settings** area, set the performance parameters.

Performance Settings					
Data Group E	More Setting:			🗌 18bit+	
Refresh Rate	480 .	, Hz	Refresh Rate Ti	4 ~	
Grayscale Level	Normal 4096	1	Grayscale Mode	Refreshing Rate Fir $ \smallsetminus $	
Shift Clock Fre	12.5	, MHz	Duty Cycle	50 ~	(25~75) %
Phase Position	2 .	1	Low Grayscale C	0	
Row Blanking	25	(=2.00us)	Ghost Control En	24	(1~24)
Line Changing	3	(0~23)			
Minimum OE w	80 ns				
Brightness Effi	68.24%				

The performance parameters displayed in the area varies depending on the receiving card. The main parameters include the followings.

- Refresh Rate: Indicates the rate of updating the image on the display. Increasing refresh rate reduces image flickering, allowing for a more stable image.
- Grayscale Level: Indicates the shading of display. The higher the grayscale level, the more brightness levels the display will have. For example, if the grayscale level is 16bit, the display can express 65,536 levels of brightness.
- Grayscale Mode: Indicates the grayscale display mode. It includes brightness first, refreshing rate first, grayscale first and performance balancing.
- DCLK Frequency: Indicates the frequency of shift clock.
- DCLK Duty Cycle: Indicates the duty cycle of shift clock. Set it to 50% in general.
- DCLK Phase: Indicates the phase of shift clock. When there are mismatching or flashing pixels, adjust this
 parameter to fix the problem.
- Refresh Rate Times: Indicates the times of refresh rate.
- Low Grayscale Compensation: Indicates the compensation for the grayscale in low grayscale conditions, allowing for more precise grayscale.
- Row Blanking Time: Used to adjust the ghost problem of the scanning type display. If the ghost problem is serious, increase the parameter value.
- Line Changing Time: Works with row blanking time to adjust the ghost of the scanning type display.
- Ghost Control Ending Time: Works with row blanking time and line changing time to adjust the ghost of the scanning type display.
- Line break trimming: Works with row blanking time to adjust the ghost of the scanning type display.
- GCLK Frequency: Indicates the frequency of grayscale clock.
- GCLK Duty Cycle: Indicates the duty cycle of grayscale clock.
- GCLK Phase: Indicates the phase of grayscale clock.
- Blanking Time Height: Used to eliminate the lower ghost
- Minimum OE Width: It is calculated from other performance parameters and can be viewed only.
- Brightness Efficiency: It is calculated from other performance parameters and can be viewed only.
- Step 8 After the settings are done, click Send to Receiving Card to send the performance parameters to the hardware.
- Step 9 After the display effect meets the expectation, click **Save** to save the performance parameters to the hardware.
- Step 10 After successful saving, choose whether to save the screen monitoring backup file to the local computer.

When the control computer can access the Internet, you can use the backup file to register screens to VNNOX Care. For details, see 7.1.2.1 Register by Using Local Backup Files (Recommended).

This step is related with the configuration of the save function. See 11.1 Configure the Save Function.



Data Group Exchange

This function is used to exchange every two data groups to adjust the display image. It can be performed only after the smart settings are done and supports regular cabinets only. For example, after you exchange the data groups A and B, data group A outputs the image of data group B, and data group B outputs the image of data group A.

Click **Data Group Exchange**, select all the receiving cards or specify one receiving card and click **OK** to open the **Data set exchange** dialog box. If the module height is less than 8 or the width is less than 20, the data group exchange is in group mode, otherwise it is in intuition mode.

The red table on the desktop indicates the original data groups. Each row is a data group. The first row is the first data group.

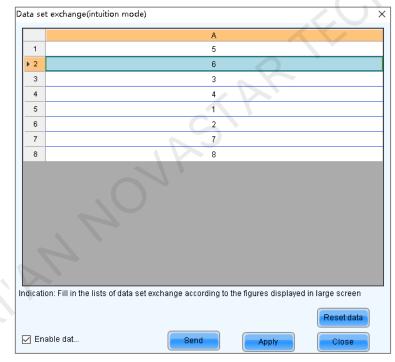
Intuition Mode

Select **Enable data exchange** and view the data group No. displayed on the screen. In the dialog box, double click the rows with the same No. in the second column and change the numbers.

Example:

The receiving card has two data groups in parallel output. The screen displays **5** and **6**, indicating that it outputs the images of data group 5 and data group 6.

In the Data set exchange dialog box, change 5 to 1, 6 to 2, 1 to 5, and 2 to 6, as shown in the figure below.



Click **Send**. The screen displays **1** and **2**, indicating that it outputs the images of data group 1 and data group 2 after data group exchange.

Group Mode

Select **Enable data exchange** and check whether the screen has a white area. If it has no white area, click **No flashing area**. The white row in the red table moves to the next data group. If it has a white area, click the the data group you want to exchange in the **Data set exchange** dialog box.



Example:

The receiving card has two data groups in parallel output. Click **No flashing area** multiple times and watch the screen. When the white row in the red table moves to the fifth data group, the screen has a white area, indicating that the screen outputs the image of data group 5.

In the **Data set exchange** dialog box, click the first data group. This exchanges data group 5 and data group 1. The white row automatically moves to the sixth data group. Then, click the second data group in the **Data set exchange** dialog box. This exchanges data group 6 and data group 2, as shown in the figure below.

C	ata set	exchange(g	roup mode)				Х	
	Serial			A				
	1			5				
	▶ 2			6				
	3							
	4							
	5							
	6							
	7							
	8							
	di se ti se	Observe #b		utite display and is th				C
11	dication	n: Observe th	e position of the	white display area in th	le large screen, the	en click the correspor	1	
	Curren	it chos	6	Undo	No flashing	Reset data		
	🗹 Ena	ible dat		Send	Apply	Close		

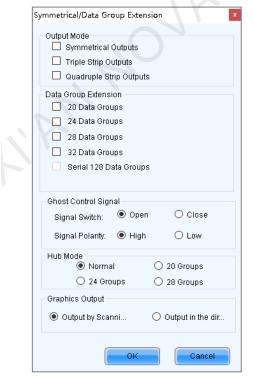
After the settings are done, click Send to send the configuration information to receiving cards.

More Settings

Click More Settings to perform the following functions and set the extended attributes for the used chip.

Symmetrical/Data Group Extension

Set the output mode of data group, data group extension, hub mode and graphics output direction.



Output Mode: If the screen is very wide and the receiving card cannot load the entire width, set the output
mode to symmetrical outputs, triple strip outputs or quadruple strip outputs.



- Data Group Extension: If the receiving card supports data group extension, select the corresponding option according to the actual condition.
- Ghost Control Signal: Use the default value.
- Hub Mode: Select a mode based on the receiving card specifications.
- Graphics Output: Use the default value.

• Monitoring Card Data Line Adjustment

Adjust the data lines used by red, green, blue and virtual red LEDs during LED error detection.

Select Enable Adjustment of Monitoring Data Line and select Red, Green, Blue or Virtual Red from the drop-down list. After the settings are done, click OK.

		Transfer Data Line	Signal
Þ	Data Line 1	Red	~
	Data Line2	Green	~
	Data Line 3	Blue	~
	Data Line 4	Virtual Red	~

Additional Function

Enable or disable some additional functions of receiving card.

Additional Function	×
Isolated Pixel Afterglow Indicator Light of Rec Shorten the synchroni Brightness becomes EMC Function: Linear	 Eliminate Close Open Enable Enable Enable Enable
Calibrati 🗹 Enable	G: 0 🖨
B: 0 🚖	VR: 0
– Delay Time of ABCDE Sig Delay of ABC signals:	nals O Enable
Delay of DE signals:	O Enable
No delay:	Enable
Delaytime:	0 🗘 Ons
	Apply
ОК	Cancel

EMC function setting is optional. The other functions are described as follows.

- Isolated Pixel Afterglow: Eliminate the afterglow problem of isolated pixels.
- Indicator Light of Receiving Card: Turn off the operating status indicator of receiving card.
- Shorten the synchronization time: Shorten the frame interval time during data output of receiving card.
- Brightness becomes strong slowly: Make the display become brighter slowly after the power is supplied.
- Linear: Increase the loading capacity of receiving card. The linear mode requires that the module connection line is straight, the cabinet does not have data row extraction and the cabinet is not rotated.
- Calibration Threshold: When the grayscale level is less than or equal to the specified level, use the average calibration coefficients, other than the pixel level calibration coefficients. This fixes the display problems in low grayscale after the screen is calibrated, such as mottling, color blocks and grayscale spikes.

The R, G, and B values are hexadecimal and the largest value is FFFF. Before setting them, check the Yaxis value corresponding to the X-axis value (the specified grayscale level) in the Gamma table in the brightness adjustment function, and then convert the Y-axis value to hexadecimal value. If the device does not support individual Gamma adjustment for RGB, set the R, G and B to the same value. The VR value setting is optional.

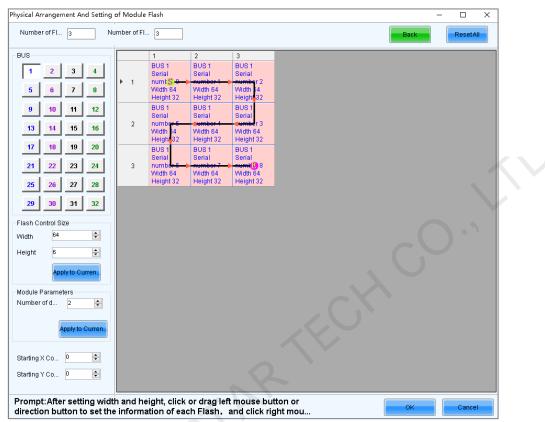


 Delay Time of ABCDE Signals: Fix the problem that the afterglow cannot be eliminated because the decoding signals are not synchronized. After the settings are done, click **Apply**.

Flash Arrangement

When the module has a flash memory, use this function to set the flash memory arrangement of cabinet. The receiving card reads the calibration coefficients and module IDs from the flash memory via bus.

Before connecting the modules that have flash memory, obtain the bus No. A bus can cascade multiple modules. Then, set the flash arrangement according to the actual connection order.



- a. Set the number of flash memory rows and columns. Generally, a module has one flash memory.
- b. Click the bus No.

f.

- c. Set the width and height of the module controlled by the flash memory.
- d. In the arrangement table, click the cells in order according to the actual module connection.

Right clicking a flash memory cell cancels the configuration of that flash memory. Clicking **Back** returns to the previous operation. Clicking **Apply to Current BUS** sets all the flash memories connected to the current bus to the same value.

- e. Set the number of data groups of the module.
 - If necessary, adjust the start coordinates of the flash memory, otherwise skip this step.
- g. If necessary, click the other bus to continue setting. After the configurations are done, click OK

Monitoring Card Data Set Exchange

When the hardware connections of the monitoring card have errors, use this function to exchange the data groups of the card without the need to reconnect the hardware.

🛛 Enable monif	oring ca
	A
1	5
2	6
3	3
4	4
5	1
▶ 6	2
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

- a. Click **Monitoring Card Data Set Exchange**. In the displayed dialog box, select **All Receiving Cards** or specify one receiving card and click **OK**.
- b. In the Monitoring card data set exchange dialog box, select Enable monitoring card data set exchange.
- C. Double click the row in the second column and change the value. For example, change 1 to 5, 2 to 6, 5 to 1, and 6 to 2, indicating that data group 1 is exchanged with data group 5 and data group 2 is exchanged with data group 6.
- d. After the settings are done, click **Send** to send the configuration information to the monitoring card.

Cabinet Information Settings

Set the weight, power, width, height, pixel width, pixel height and voltage of the cabinet base on the actual situation.

mation Settings		×
0.00	Power (W):	0.00
0.00	Height (cm):	0.00
0	Pixel Height:	0
0.00		
	Apply	Close
	0.00 ¢ 0.00 ¢	0.00

6 Brightness and Chroma Adjustment

6.1 Calibration

6.1.1 Set Online Calibration Parameters

Applications

Set parameters of displaying image and disable cabliration or set calibration type during online calibration when NovaLCT works with NovaCLB calibration software.

Applicable Products

- Dark or bright line correction: Applicable to the A8s receiving card
- Other functions: Applicable to all receiving cards and sending cards

Prerequisites

- Hardware setup is done.
- NovaCLB calibration software is installed.

Related Information

Screen calibration enables the brightness and chroma of LEDs to reach target values, allowing for balanced images and better display effect.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK.

The default password is "admin".

Step 2 Click calibration or choose Tools > Calibration from the menu bar.

Single-Screen Mode Combined-Sc * Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients Current Operation Communication Port USB@Port_#0003 Hub_#0001 * Network Setting Local IP Port 9000 Reconnect Current Screen Communication Information Its1722 Enable network monitoring successfully Communication Information Settings of Displaying Image Position to Display Image: Position to Display Detice Response Time: 100 * ms Use input source for display Enable/Disable Calibration Disable Disable Disable Disable	Screen Calibration	-		×
Current Screen Current Screen Communication Information Communication Information If 17:22 Enable network mondoring successfully Current Screen Communication Information Communication Communication Co		Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients		
USB@Port_#0003 Hub_#0001 Current Screen © Screen1 - Communication Information 16:17:22 Enable network monforing successfully Settings of Displaying Image Position to Display image: @ Primary Display Extended Display Device Response Time: 100 Image: Im	Current Operation			
• Screen1 • Communication Information • Settings of Displaying Image Position to Display Image: • Primary Display • Extended Display Device Response Time: • ① • ① • ms ⊡ Use Input source for display Enable/Disable Calibration • Disable • Disable • Disable • O Disable • O Disable Calibration • Disable • O Disable • O Disable Calibration •		Local IP 172.18.163.194 V Port 8080 Reconnect		
Image: Streen1 Image: Imag	Current Screen			
Settings of Displaying Image Position to Display Image: Primary Display Extended Display Device Response Time: Do m ms Use input source for display Enable/Disable Calibration Disable	© Second			
Position to Display Image: Primary Display Extended Display Device Response Time: Too The mass Use Input source for display Enable/Disable Calibration Disable				
Device Response Time: 100 ms Use input source for display Enable/Disable Calibration O Disable	Position to Display Image:			
100 ms Image: Second				,
Use input source for display Enable/Disable Calibration Disable				
Enable/Disable Calibration	100 🛨 ms			
O Disable	Use input source for display			
	Enable/Disable Calibration			
	O Disable			
Brightnes	Isightnes			
O Chroma	O Chroma			
O Full-Graysc	O Full-Graysc		Olaar	
Dark or Save	Dark or Save	ExportLog	Clear	

Step 3 Select the Single-Screen Mode tab or Combined-Screen Mode tab.

- Step 4 In single-screen mode, select a communication port and screen. In combined-screen mode, skip this step.
- Step 5 Set the displayed parameters.

Figure 6-1 Screen calibration

- Position to Display Image: Choose to display the image of the primary or extended monitor on the screen.
- Device Response Time: In combined-screen mode, setting this parameter allows the display window to fit well
 with the time for camera to take pictures.
- Use input source for display: Select this option if you want to use a signal source for display. Deselect this
 option if you want to use hardware for display.
- Enable/Disable Calibration: Disable calibration, or select brightness calibration or chroma calibration. Dark or Bright Line Correction can be selected at the same time. Click Save to apply your settings.
- Step 6 If network monitoring succeeds, open NovaCLB and enter the local IP address and port number displayed on the **Online Calibration** tab page of NovaLCT to connect NovaCLB to NovaLCT.

If network monitoring fails, click Reconnect, or change the port and then click Reconnect.

Step 7 (Optional) Click **Export Log** to export the communication log, or click **Clear** to clear the communication log.

6.1.2 Get Average Coefficients

Applications

Get the average coefficients of a specified area on a screen.

Applicable Products

All receiving cards

Prerequisites

None

Related Information

Offline calibration is not available for combined screens.

Operating Procedure

- Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".
- Step 2 Click Calibration or choose **Tools** > **Calibration** from the menu bar.
- Step 3 Select the Single-Screen Mode tab.
- Step 4 Select a communication port and screen.
- Step 5 Select the Offline Calibration tab.

Figure 6-2 Offline calibration

-		
Screen Calibration		- 🗆 X
Single-Screen Mode Combined-Sc · ·	Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients	
Current Operation Communication Port USB@Port_#0003.Hub_#0001 ~	Display Area Screen:1 Starting coordinateX=0, Y=0 Size128W×64H	
Current Screen	Column Nu 0 Display 100 C Row Number 0 Display 100 C Average Calibration Coefficient	Display Hide
		Get Average C
	Display Parameters Mode All	
Settings of Displaying Image	Color Red Green Blue White Black	
Position to Display Image:	Brightness < 40 👻 %	
Primary Display		
 Extended Display Device Response Time: 100 ms Use input source for display 		
Enable/Disable Calibration		
O Disable		
Brightnes		
O Chroma		
Full-Graysc Dark or Save		

- Step 6 Specify an area where you want to get the average calibration coefficients.
- Step 7 Click Get Average Coefficients.
- Step 8 After the average calibration coefficients are obtained successfully, click OK.
- Step 9 (Optional) Click **Display** or **Hide** to show or hide the display window.

6.1.3 Manage Calibration Coefficients

Applications

Upload, save, adjust, erase and reload calibration coefficients.

Applicable Products

- Dark or bright line correction: Applicable to the A8s receiving card
- Other functions: Applicable to all receiving cards



Prerequisites

- If you want to use a database file, you need to prepare it.
- Module flash management requires modules with flash memory.

Related Information

Calibration coefficient management is not available for combined screens. Pixel level calibration database files fall into two types:

Screen calibration database file

Saves the coordinates and calibration coefficients of each pixel on a screen. After the location of a cabinet is changed, the calibration coefficients cannot be uploaded to the cabinet.

Cabinet calibration database file

Saves the coordinates and calibration coefficients of each pixel on a cabinet according to the cabinet number. After the location of a cabinet is changed, the calibration coefficients can be uploaded to the cabinet according to the cabinet number.

Module flash memory can store calibration coefficients and module IDs. In the event of network outage, you can hold down the self-test button for 2 seconds to read the calibration coefficients in module flash memory back to the receiving card.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK.

The default password is "admin".

- Step 2 Click calibration or choose Tools > Calibration from the menu bar.
- Step 3 Select the Single-Screen Mode tab.
- Step 4 Select a communication port and screen.
- Step 5 Select the Manage Coefficients tab.

Figure 6-3 Calibration coefficient management

Screen Calibration		-	\times
Single-Screen Mode Combined-Sc • • Current Operation Communication Port USB@Port_#0003.Hub_#0001 v Current Screen	Online Calibration Offine Calibration Manage Coefficients Select Operation		
Screen1	Save calibration coefficients to database		
. 01	Set coefficients for a new receiving card		
	Elim Set coefficients for a new module		
	Adjust coefficients (Color is not uniform on screen)		
Settings of Displaying Image	✓ Erase or reload calibration coefficients		
Position to Displaying image Position to Display Image: Primary Display	C Reset calibration coefficients		
O Extended Display	Upload coefficinets (for factory use)		
Device Response Time :	📥 Module Flash		
Use input source for display			
Enable/Disable Calibration			
Brightnes			
O Chroma			
Full-Graysc Dark or Save			



Step 6 Perform the following operations as required. During the operation, you can select **Disable Calibration**, **Brightness Calibration** or **Chroma Calibration** on the left. **Dark or Bright Line Correction** can be selected at the same time. After saving, you can view the effect of applied coefficients on the screen.

Upload coefficients

- Pixel level calibration database: Select the cabinet or screen calibration database file from the local computer and fast or stably upload the calibration coefficients to receiving cards.
- Dark or bright line database: Select the dark or bright line correction database file from the local computer and stably upload the calibration coefficients to receiving cards.
- Full-Grayscale Calibration Database: Select the full-grayscale calibration database file from the local computer and stably upload the calibration coefficients to receiving cards.

Stable uploading takes more time than fast uploading, but it is more stable and reliable.

• Save calibration coefficients to database

Save the calibration coefficients in the receiving cards to an existing or new database.

Set coefficients for a new receiving card

Get calibration coefficients by uploading calibration database file or referring to one or more surrounding cabinets. Adjust and save the coefficients to receiving cards as required.

Set coefficients for a new module

Get calibration coefficients by uploading calibration database file or referring to one or more surrounding modules. Adjust and save the coefficients to receiving cards as required.

Adjust coefficients (Color is uniform on screen)

Adjust the current calibration coefficients of receiving cards or adjust the coefficients by referring to the surrounding area. After the adjustment, you can also apply the coefficients to other specified areas.

Erase or reload calibration coefficients

Erase the calibration coefficients in the application areas of receiving cards or reload calibration coefficients from application areas. You are advised to back up the database file before erasing it.

Reset calibration coefficients

Set calibration coefficients to specified values.

Upload coefficients (for factory use)

Upload the calibration coefficients in the cabinet calibration database file to the corresponding cabinets in turn according to the imported cabinet ID and export a screen calibration database file. Stable uploading takes more time than fast uploading, but it is more stable and reliable.

Module Flash

Check module flash memory status, view the calibration coefficients of modules and receiving cards, and save calibration coefficients to receiving cards and modules based on their physical addresses or the topology.

Type "admin" with your keyboard. A Save Calibration Coefficients to Module button is displayed.

When **Auto Upload Module** is selected, if the system detects that a cabinet ID is changed after the control system is powered on, the calibration coefficients in the module flash memory will be automatically uploaded to the receiving card.

Notes

Types and causes of module flash memory check errors:

- Hardware Fault: Screen configuration or flash topology is not consistent with the actual condition.
- Communication Error: There is a problem with hardware connection.
- Flash Topology Error: The module does not have flash memory or no flash topology is configured in **Screen Configuration**.

The **Coef Type** parameter value include normal coefficient, low-grayscale coefficient and full-grayscale coefficient. To set that parameter value to low-grayscale coefficient or full-grayscale coefficient, ensure that both the driver chip and receiving card support low-grayscale coefficient or full-grayscale coefficient.

Related Operations

During coefficient management, three methods are provided for you to select an area for coefficient management.



Figure 6-4 Selecting an area for coefficient management



- Full screen: Manage the coefficients of the entire screen.
- Select by pixel area: Manage the coefficients of a specified area.

For full-grayscale calibration database file, the parameter **Upload by area** is displayed at the bottom of the page. If you want to upload the data of full-grayscale database split by the split tool to a certain location, please select **Upload by area** and set other parameters.

Select by Topology or List: Manage the coefficients of a specified cabinet, module or pixels. For a standard
screen, a cabinet topology is displayed. For a complex screen, a cabinet list is displayed. If it is not convenient
to select an area with the software, you can select Select Area on Screen to select the area on the display
window.

Two methods are provided for calibration coefficient adjustment. You can display or hide the color window during the adjustment.

Simple Adjustment

As shown in Figure 6-5, drag the slider to adjust the values of red, green and blue. Click **Advanced Adjustment** to open advanced adjustment page.

Advanced Adjustment

As shown in Figure 6-6, drag the slider to adjust the brightness, saturation and hue for red, green and blue, and adjust color temperature. Click **Simple Adjustment** to go back to simple adjustment page.



6.1.4 Manage Double Calibration Coefficients

Applications

View calibration coefficients saved in the application area and factory area, get calibration coefficients in the factory area, and save calibration coefficients to the factory area.

Applicable Products

The A5, A5s, A7, A7s, A8, A8s, A9s and A10s Plus receiving cards

Prerequisites

None



Related Information

Calibration coefficients can be saved in both the factory area and application area of a receiving card. A copy of coefficients is saved in the factory area before a cabinet leaves the factory. The calibration coefficients usually used by users are in the application area. If necessary, calibration coefficients in the factory area can be restored to the application area.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".



- Step 2 Click calibration or choose Tools > Calibration from the menu bar.
- Step 3 Select the Single-Screen Mode tab or Combined-Screen Mode tab.
- Step 4 In single-screen mode, select a communication port and a screen. In combined-screen mode, skip this step.
- Step 5 Select the **Double Calibration Coefficients** tab.



Screen Calibration		-	×
Single-Screen Mode Combined-Sc · ·	Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients		
Current Operation Communication Port COM99 ~			
Current Screen			
Screen1			
	View calibration coeffi		
Settings of Displaying Image			
Position to Display Image:			
Primary Display			
 Extended Display 			
Device Response Time:			
100 🔶 ms			
Use input source for display			
Enable/Disable Calibration			
O Disable			
Brightnes			
O Chroma			
O Full-Graysc	Coef Type: Normal Coef 🗸		
Dark or Save			

Step 6 Perform the following operations as required.

View calibration coefficients in application area

Click View calibration coefficients in application area, select Disable Calibration, Brightness Calibration or Chroma Calibration, and view the application result of calibration coefficients on the screen.

View calibration coefficients in factory area

Click View calibration coefficients in factory area, select Disable Calibration, Brightness Calibration or Chroma Calibration, and view the application result of calibration coefficients on the screen.

• Get calibration coefficients in factory area

Click **Acquisition of factory area correction factor** to restore the calibration coefficients from factory area to application area.

Save calibration coefficients to factory area

Type "admin" with your keyboard. A **Save coefficients to factory area** button is displayed. Click the button to save the calibration coefficients in the application area to factory area.



6.2 Adjust Brightness

6.2.1 Adjust Brightness Manually

Applications

Manually adjust the scree brightness, Gamma, color temperature and color space to change the brightness and chroma expressiveness of the screen in real time, meeting the environment condition and user needs.

Applicable Products

- Individual Gamma adjustment for RGB:
 - If the bit depth of input source for the sending card is 8bit, the applicable receiving cards include the A4, A4s, A5, A5s, A5s Plus, A7, A7s, A7s Plus, A8, A8s, A9s, A10s Plus, DH7512 and DH3208.
 - If the bit depth of input source for the sending card is 10bit or 12bit, the applicable sending cards include the MCTRL1600, MCTRL4K, MCTRL660 PRO, KT8, KT8E, KT16E, KT16C, MCTRL R5, MEE200 and MEE400.
- Other functions: Applicable to all receiving cards and sending cards

Prerequisites

None

Related Information

Manual brightness adjustment is to set screen brightness manually. After NovaLCT is opened, you can directly perform the steps in Operating Procedure. After logging in to NovaLCT, you can also perform the operations in Custom Gamma, Custom Color Temperature and Custom Color Space of this section.

If the ambient brightness is high, adjust the screen brightness to a higher level to ensure clear display. If the ambient brightness is low, adjust the screen brightness to a lower level to reduce light pollution.

Operating Procedure

Step 1 Click Brightness or choose Settings > Brightness from the menu bar.

- Step 2 Select Manual Adjustment.
- Step 3 Drag the slider to adjust brightness and select Grayscale or Contrast.
- Step 4 Click is to expand the advanced settings shown in Figure 6-8 and perform the following operations as required.

rightness Adjustme	nt	×	<
VSB@Port_#0002. Hub	_#0001-Screen1		
	Manual Adjustment	O Auto Adjustment	
Brightness			
Brightness	<	> 255 (100%)	
	Grayscale	Contrast	
Advanced Settings			
Gamma Gamma	Color Te Color Spa		
🖲 Gamma Valu	<	> 2.8	
O Custom	Configuration		
	~		0.1
			r.v
		Refresh Save to HW	
ead Receiving Card	Parameters,Results-Successful		
Adjust Ga	imma		
Drag the s	lider to adjust Gamma va	alue.	
Adjust co	lor temperature		
Choose R	ough Adjustment and d	rag the slider to adjust the color temp	perature. Or choose Precise
Adjustmo	nt and click a custom col	or temperature to use it, such as	Precise A 9600
Adjust co			
Disable co	lor space, enable a stand	dard color space (PAL/NTSC), or ena	able a custom color space, such

After logging in to NovaLCT, you can set custom Gamma, custom color temperature and custom color space. For details, see Custom Gamma, Custom Color Temperature and Custom Color Space.

Step 5 After the configuration is done, click **Save to HW** to save the configuration to the hardware.

Custom Gamma

- $Step \ 1 \quad On \ the \ Gamma \ Adjustment \ page, \ select \ Custom \ Gamma \ Adjustment.$
- Step 2 Click **Configuration** to open the dialog box shown in Figure 6-9.

mma Adjustment			×
Gamma Adjustme. White Red Gamma	⊖ Gree	n 🔿 Blue Gamma	
Grayscale Bit Val 14 V			
iamma table can be generated quickly by adjusting	Gamma ta	ble can be fine-adjusted by editi	ng the values
-axis Range 0 🚖 _ 255 🖨	X	Y	A Move Up
-axis Range 0 🔷 _ 65535 🗘	▶ 0	0	Move Op
	1	4	Move Down
2.8	2	8	Save
Recommended Gamma	3	12	Gave
Original O Mode A O Mode B	4	16	Load
Picture Quality	5	20	
	6	24	
Soft Mode O Enhanced Mode	7	28	
/	8	32	
	9	36	
	10	40	
	11	44	
	12	48	
	13	52	
	14	56	
	15	60	
	16	64	~

Step 3 If the control system supports individual Gamma adjustment for RGB, select **White** to adjust the Gamma curves for red, green and blue at the same time. Or, select **Red Gamma**, **Green Gamma**, or **Blue Gamma** to adjust the Gamma curve for a single color. If the control system does not support individual Gamma adjustment for RGB, skip this step.

- Step 4 Perform any of the following operations as required to configure the Gamma curve.
 - Load a Gamma configuration file

Figure 6-9 Custom Gamma adjustment

Click Load to load a Gamma configuration file.

Adjust the Gamma curve manually

Drag the slider to adjust the Gamma curve.

Adjust the Gamma table manually

Double click a value in the Y column to edit the value, and select a value in the Y column and click **Move Up** or **Move Down**.

- Step 5 Set relevant parameters.
 - Grayscale Bit Value: Use the default value.
 - X-axis Range: It indicates the range of X-axis for Gamma curve. The X-axis ranges for 8-bit, 10-bit and 12-bit input sources are 0–255, 0–1023 and 0–4095 respectively.
 - Y-axis Range: It indicates the range of Y-axis for Gamma curve. The range is always 0–65535.
 - Recommended Gamma: The original mode is contrast preferred and Mode A is grayscale preferred. Mode B falls between those two modes.
 - Picture Quality: When the Gamma curve is in Mode A or B, the picture quality can be set to soft mode or enhanced mode.
- Step 6 After the settings are done, click **Send** to send the configuration to the hardware.
- Step 7 (Optional) Click **Save** to save the Gamma information as a configuration file.

Custom Color Temperature

Step 1 On the Color Temperature Adjustment page, select Precise Adjustment.

Step 2 Click to open the dialog box shown in Figure 6-10.



Figure 6-10 Custom color temperature

Screen USB@Port_#0002 Hub_#0001-Screent Import Export otor Temperature Table Operation prompts The color temperature name box of selected color temperature section is yellow Add'- add color temperature section Delete'- delete the selected color temperature section Edit'- to edit the selected color temperature section Edit'- to edit the selected color temperature section Edit'- to edit the selected color temperature section Edit'- to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color temperature Color temperature Brightness value R gain G gain B gain R brightness G brightness	Refresh erature section) B brightness	
color Temperature Table Operation prompts The color temperature name box of selected color temperature section is yellow Add add color temperature section Delete ¹ - delete the selected color temperature section Edit ¹ - to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color temperature)	erature section)	
Operation prompts The color temperature name box of selected color temperature section is yellow Add add color temperature section Delete ⁺ - delete the selected color temperature section Edit ⁺ - to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color tempera- temperature section (including the deletion of the selected row, clear the information in the current color temperature)		
The color temperature name box of selected color temperature section is yellow Add'- add color temperature section Delete'- delete the selected color temperature section Edit'- to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color temperature		
Add"- add color temperature section Delete"- delete the selected color temperature section Edit"- to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color tempe		
Delete'- delete the selected color temperature section Edit'- to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color tempe		
Edit*- to edit the selected color temperature section (including the deletion of the selected row, clear the information in the current color tempe		
Color temperature Brightness value R gain G gain B gain R brightness G brightness	B brightness	
Add Edit Delete Clear	Saved to local	
019/11/28 17:41:54The screen information has been read successfully		
e screen information has been read successfully		

- Step 3 If you have a color temperature configuration file (.fcg), click **Import** to complete the configuration quickly. If you do not have a color temperature configuration file, continue performing the following operations to manually complete the configuration.
- Step 4 Click Add to open the dialog box shown in Figure 6-11.

Add Color Temperature Information × Color Temperatu... 9600 Red Green Blue brightness brightness Green Add Brightness Brightness Red gain Blue gain gain Edit 100.00% 100.009 Delet Clear OK Exit

Figure 6-11 Adding color temperature information

Step 5 Click Add Brightness to open the dialog box shown in Figure 6-12.



Figure 6-12 Adding brightness information

Add Brightness Information	×
Set Color Temperature Information Brightness Value 🗿 %	
Current Gain	
R	> ~ %
G <	> ~ %
в <	> ~ %
Synchronize	
Brightness Component	
R <	> 229 🔶 (89.80%)
G <	> 229 🚔 (89.80%)
в <	> 229 ≑ (89.80%)
Synchronize	
Add	Exit

Step 6 Add color temperature information corresponding to the specified brightness values.

Current Gain is a color temperature parameter of modules. This parameter can be set when supported by module chips. **Brightness Component** is a color temperature parameter of receiving cards. If **Synchronize** is selected, the R, G and B parameters will be set to the same value. You can edit, delete and clear the color temperature information if necessary.

- Step 7 After the configuration is done, click **Save to local** to save the custom color temperature. A corresponding button will be displayed next to **Precise Adjustment**.
- Step 8 (Optional) Click Export to save the current color temperature information as a configuration file.

Custom Color Space

Step 1 On the Color Space Adjustment page, click _____ to open the dialog box shown in Figure 6-13.

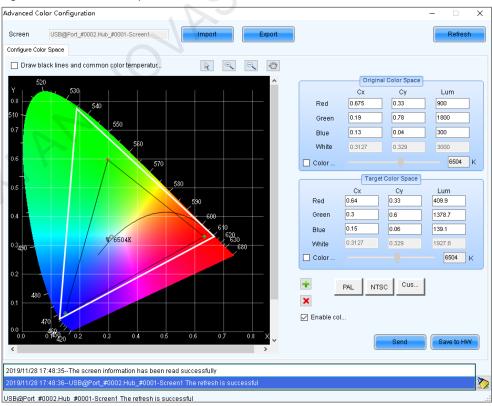


Figure 6-13 Custom color space

Step 2 Set the original color space.



The white triangle represents the original color space. The target color space is configured based on the original color space. You are advised to use a colorimeter to measure the original color space of the screen and then enter the measured values in the original color space table.

- Step 3 Perform any of the following operations as required to set custom color space.
 - Select a standard color space
 - Click **PAL** or **NTSC** to use one of the standard color spaces.
 - Select an existing custom color space

If there is a custom color space, click to use it. If not, click **Import** to import a custom color space, or click to create a custom color space and then click to use it.

Adjust the color space diagram manually

Drag vertexes of the black triangle in the diagram on the left to adjust the target color space. If **Draw black lines and common color temperature points** is selected, a black curve (color temperature curve) and some common color temperature points (solid round spots) will be displayed in the diagram.

Adjust the color space values manually

Change the parameter values in the target color space table for precise adjustment.

- Step 4 After the configuration is done, select **Enable color space adjustment** to apply the target color space, and click **Send** to send the configuration information to the hardware.
- Step 5 Click **Save to HW** to save the information to the hardware.

6.2.2 Adjust Brightness Automatically

Applications

Set rules for automatic brightness adjustment, allowing NovaLCT or sending cards to automatically adjust screen brightness.

Applicable Products

All sending cards

Prerequisites

When screen brightness is adjusted based on ambient brightness, a light sensor must be connected to the sending card or multifunction card.

If the light sensor is connected to the multifunction card, peripheral configuration needs to be completed on multifunction card management page.

Related Information

After you configure the automatic brightness adjustment, two adjustment modes are provided.

Software adjustment mode

NovaLCT automatically adjusts screen brightness. This mode takes effect when the control PC is connected to the sending card and monitoring is running. Combined-screen brightness, color temperature and Gamma must be adjusted and night mode must be enabled with the software.

The adjustment process will be recorded as a log which can be exported and viewed in iCare of VNNOX cloud platform.

Hardware adjustment mode

The sending card automatically adjusts screen brightness. This mode takes effect when the control PC and sending card are disconnected or monitoring stops running.

Combined screens do not support this mode.

The adjustment process will not be recorded as a log.

Operating Procedure

- 🍅

Step 1 Click Brightness or choose Settings > Brightness from the menu bar.



Step 2 Select Auto Adjustment.

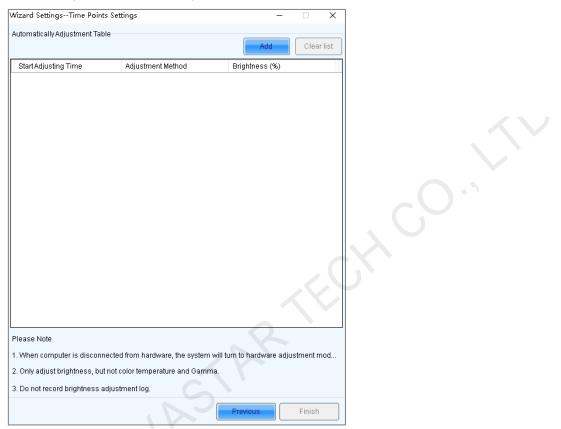
Step 3 Click Wizard Settings.

If the auto adjustment table is configured, you can add, delete and modify items in the table, or click **Light Sensor Configuration** to set light sensor information.

Step 4 Select an adjustment mode as required and click Next.

Advanced adjustment

Screen brightness is adjusted by time periods. You can choose to adjust screen brightness according to specified brightness or ambient brightness.



a.

Click Add.

b. Set the start time and adjustment method and then click OK.

Adj	ust the Time	e Setting			X
8	Starting Ti	10:00		•	
,	Adjust Type	Specified	O Environme		
E	3rightness	10		€ %	
1	<u>More Setting</u>	<u>s</u>			
			ок	Cance	el

c. Click More Settings to set color temperature and Gamma vale.

The options in the drop-down box next to color temperature are the custom color temperatures.

d. After the settings are done, click **Cancel** to close the dialog box.

As shown in the figure below, the two configuration items denote that screen brightness will be adjusted to 80% from 8:00 to 18:00 and adjusted to the corresponding values in the brightness mapping table according to ambient brightness from 18:00 to 8:00 of the next day.

	Start Adjusting Time	Adjustment Method	Brightness (%)		
\square	08:00	Specified Brightness	80	<u>Edit</u>	<u>Delete</u>
\square	18:00	Environment Brightness		<u>Edit</u>	<u>Delete</u>



e. If there is no **Environment Brightness** under **Adjustment Method**, click **Finish**. If there is **Environment Brightness** under **Adjustment Method**, click **Next** and complete light sensor settings according to the description in Light Sensor Adjustment below.

Light sensor adjustment

Screen brightness is adjusted according to ambient brightness. Set the corresponding relations between ambient brightness and screen brightness in the ambient brightness mapping table.

Vizard SettingsLight Sen	or Settings		– 🗆 X	7
	-			
Light Sensor Configuration		ht Sensor T	Clear Failed Li	
Whether to	Environment			1
Enable Location	Brightness	From	Remark	
Prompt: Please connect the light sensor will be invalid v			unction card, otherwise the inputer and hardware not co	
☑ When the light sensor t	ails, the brightness shoul	1 b 5.	0 🜩 %	
Brightness Mapping Table	environment brightness	screen brightness)		
			Fast Section D	
Environmental Brightness	(Lux) Scree	en Brightness (%)	<u>^</u>	
20	40		×	
1218	44			
2416	48			
3614	52			
4812	56			
6010	60		v	
7200 Night mode	4.3		×	
Opening		Offlir	ne work is not supported	
Brightness maximum(%)	Start time(h)	End tim	ne(h)	
			X	
		Prev	vious Finish	

a. Click Light Sensor Test to test the light sensors connected to the control system, including the light sensors connected to all sending cards and multifunction cards.

If you want to clear the ineffective light sensor information, click Clear Failed Light Sensor Information.

b. (Optional) Select When the light sensor fails, the brightness should be adjusted to and set a brightness value.

If this option is not selected, the screen brightness will keep the last updated brightness value when the light sensor fails.

c. Click 📧 or 🔀, or click Fast Section Division to set the brightness mapping table.

Fast section division can equally divide the ambient brightness range and screen brightness range into the specified number of segments.

d. (Optional) Select **Opening** to enable night mode and set the maximum brightness of the specified time period.

When surrounding lights interfere with the light sensor or an exception occurs when the light sensor is collecting ambient brightness data, screen brightness may be too high. This can be avoided in night mode. If the start time and end time are the same, night mode takes effect all the time.

- e. Click Finish.
- Step 5 After the settings are done, click **Save**.
- Step 6 (Optional) Click Export Log to export the brightness adjustment log in software adjustment mode.
- Step 7 (Optional) Set the advanced parameters of auto brightness adjustment.
 - 1. On the taskbar, click i and choose Brightness Advanced Settings.



Smart Brightness Adjustment	×
☑ Enable Brightness Gradient	
Automatic brightness adjustment information	_
Environment brightn 60 🚖 S	
Times of reading en 5	
Note: Under the automatic brightness adjustment mode, we need to calculate the average value of light sensor after N times of readings before adjusting the brightness of screen, and then adjust the screen brightness according to the curve formed by enviro	
Save	

- 2. Select Enable Brightness Gradient. Screen brightness will gradually change to the target value.
- 3. Set the cycle and number of times for the light sensor to measure ambient brightness.

For example, if the cycle is 60 seconds and number of times is 5, the light sensor will measure ambient brightness every 60 seconds. After 5 times of measurement, NovaLCT will calculate the average of the measured values without the maximum and minimum ones. This average value is ambient brightness. If multiple light sensors are connected, NovaLCT will calculate the average of all the ambient brightness values.

4. Click Save.

6.3 Adjust Multi-batch Cabinets

Applications

Adjust the chroma of cabinets or modules from multiple batches to make the overall screen chroma more uniform.

Applicable Products

All receiving cards

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose Tools > Multi-batch Adjustment.

Step 2 Select Manual Adjustment.

If you have a configuration file, select **Apply Adjustment File** to quickly complete chroma adjustment for cabinets from multiple batches.

Figure 6-14 Multi-batch adjustment

		×	
O Apply Adjustment File			
No Colorimeter v			
	Next		
		O Apply Adjustment File	Apply Adjustment File No Colorimeter

Step 3 If no colorimeter is connected, select **No Colorimeter**. If a colorimeter is connected, select the colorimeter type and set its measurement accuracy.

Step 4 Click Next.

Step 5 Set the parameters of a sample batch.

Figure 6-15 Setting sample batch

Multi-Batch Adjustme	ent - Add Sample Batch — 🗌 🗙								
Add Delete Im	Se Ze Export								
Batch Name Sample Batches1	Sample Information Fixed Batches, Adjust Other Batches to The Batch								
Sample Batches2 Information of The Current LED Display Communication P USB@Port_#0001.H V Select Displa LED Display1 V									
Display Screen: Main Display Extended Display Sample Area Information									
	No. LED Display X Y W H								
	Measurement Value of Colorimeter Display Screen Brightness Cx Cy Red Green Blue Blue C								
	Previous								

1. (Optional) Select Fixed Batches, Adjust Other Batches to The Batch.

Fixed sample batch is for reference and cannot be adjusted. All the sample batches can be adjusted without a fixed batch.

- 2. Select a communication port and screen.
- 3. Select a position to display image.
- 4. Click 💼 to specify an operating area for the fixed sample batch.



			-		×
Screen:1 Startin	g coordinateX=0, Y=0 Size64	W×32H			
	el 💿 Topology or List		'ea o		
(1.1)				Zoom:	
🗌 Hidden Screen (E	SC) 🗌 Select More	than One Area	Add	Complete	

- Pixel: Perform operations in a specified area.
- Topology or List: Perform operations on a specified module or pixels. If it is not convenient to specify an
 area with the software, you can select Select Area on Screen to specify an area on the display window.
- 5. Click **Brightness**, **Cx** and **Cy** by using a colorimeter and enter the measured values. If no colorimeter is connected, skip this step.

Measurement Value	of Colorimeter		
Display Screen	Brightness	Сх	Су
Red	120.40	0.6882	0.3098
Green	273.20	0.1562	0.7226
Blue	60.77	0.1259	0.0688

Step 6 Set other sample batches.

- 1. Import, add or delete other sample batches as required.
- 2. Select a sample batch and specify an operating area by following 4 in Step 5.
- 3. Enter the values measured by the colorimeter by following 5 in Step 5. If no colorimeter is connected, skip this step.
- Step 7 Click Next.
- Step 8 View the preliminary adjustment result, select a result option and click **Next**. If no colorimeter is connected, skip this step.

Figure 6-16 Vi	ew the prelir	minary adjus	tment result

Multi-Batch Adjustment - Watch Initial Adjustment Effect	_ [×
View Preliminary Result		
Automatic Switching Interval 3 🚖 Second Switching (1-60 se		
	0	
Brightn <	> 50 %	
Enable Correction		
Result Selection		
O Satisfactory (Enter Color Temperature Adjustment)		
O Not Satisfactory (Enter Fine Adjustment of Batch)		
Previou	JS Next	

Selecting **Automatic Switching** automatically switches the display color. Selecting **Enable Correction** allows you to view the calibration result.

- If the calibration result is satisfactory, go to Step 10.
- If the calibration result is not satisfactory, go to Step 9.
- Step 9 Fine tune the sample batch.

Figure 6-17	Fine	tunina	а	sample	batch

Multi-Batch Adjustment - Sample Batch Adjustment - 🗆 🗙
Delete Za Export
Name Display Sample Batch Adjustment Batch Sample Batch Image: Color Brightness: Image: Solution of the
Red Coefficient Green Coefficient Blue Coefficient Red Brig > 2033 Green C > 0 Blue Co > 0 Blue Co > 0 Balanced Balanced Description Withdraw
Previous Next

- 1. Select the sample batch to be displayed.
- 2. Select a display color.
- 3. Drag the slider to adjust brightness.
- 4. Select **RGB** or **HIS** and adjust the coefficients of red, green and blue.

You can click Withdraw to restore the coefficients.

(Optional) Click **Balanced** and perform balanced adjustment for the sample batch in the dialog box that appears.
 Click **Balanced Description** to see the detailed description of balanced adjustment.

Balanced a	adjustment - R	ed, green and bl	ue		-	- ×
R	eference Batch	Selection				
	Reference Ba	atch: Samp	le Batches1 🔍 🗸			
B	alanced Adjustr	ment (Red, Green	, Blue)			
	Adjustment N	lode: 💿 R	GB	○ HSI		
	Red Coefficient	Green Coefficient	Blue Coefficient			
	Red Brig	<			> 2047	
	Green C	<			> 6	
	Blue Co	<			> 0	
					Cancel Adjus	t
						lext

6. Click Next.

Step 10 Select Adjust Color Temperature. Drag the slider to adjust color temperature and view the effect.

Multi-Batch Ad	djustment - Color Temperature Adjust	ment			-		×
	olor Temperature Adjustment						
	Color Temperat <		2	> 9500	÷к		
	Brightness: Automatic Switching Inter	val 3 €	 Second Switt seconds) 	> 50 % ching (1-60			
	101						
	74						
$\langle V \rangle$				Previous		lext	

Figure 6-18 Adjusting color temperature

Step 11 After the adjustment is done, click Next.

Step 12 Click Add Areas to select the areas where the adjustment effect will be applied.

Figure 6-19 Applying adjustment effect

	nt - Appl	ly of Adjustment Results				_		1	
Apply Adjustment —		,							
Batch Name		-	-						
Sample Batches1	No.	Regional Information	LED	Apply	Cancellati	Deletion			
Sample Batches2	1	USB@Port_#0003.Hub_#000	reen on Lf	Apply	Cancel	Delete	Display		
							the C		
							Add Areas		
							Apply All		
							Cancel All		
	Er	nable Correction 📃 Display	All Batches		Save	File	Save to Flash		
-									
					Previous		Complete	7.1	

Step 13 Click Display screen on LED display to view the adjustment effect.

- Enable Correction: After this option is selected, you can view the calibration result.
- Display All Batches: After this option is selected, all sample batches are displayed.
- Step 14 Click Apply or Apply All.
- Step 15 Click Save to Flash to save the configuration to the hardware.
- Step 16 (Optional) Click Save File to save the configuration as a file (.lxy).
- Step 17 Click Complete and OK.

6.4 Adjust Dark or Bright Lines

Applications

Adjust dark or bright lines between cabinets or modules to improve visual experience.

Applicable Products

All receiving cards

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose Tools > Quickly Adjust Dark or Bright Lines > Adjust Dark or Bright Lines.

If you have a configuration file for dark or bright line adjustment, choose **Recover Dark or Bright Lines** to quickly complete dark or bright line adjustment.

Step 2 Click the corresponding Quickly Adjust button according to the receiving card type and adjust dark or bright lines.



Figure 6-20 Adjusting dark or bright lines

Quickly Adjust Dark or Bright Lines		\times
Common Version	Ax series, MRV308, MRV328, MRV316, MRV366,DF30, Axs V4.4.0.0 and later versio	
Quickly Adjust	Quickly Adjust	

Common version

Ouiekky	Adjust Day	rk or Bright Lines				- 🗆 X
Quickly	Adjust Dar	k or bright Lines				
	t Screen	B@Port_#0001.H⊨ ∨ Serial	Numb 1 🗸 F	Position of O Main scr	re 🧹 🗌 Moduel	Operation Instructions and Attentions
	ogy Graph S ompt: Yellov	Stitching w means to select all pixels	, while green means t	o select some pixels.	Sele	ction Op 🔽 Row Di 🗹 Colum
	1	2	3	4	5	
	6	7	8	9	10	
	11	12	13	14	15	C O T
	16	17	18	19	20	
	21	22	23	24	25	
- Adiuc	t Dark or Br	ight Lines			🗌 Dis	play Seri 🔲 Lock Selection 📄 Hide Topolo
Aujus	Method:	 Red, Green an 	 White Price 	rity		
	Color		Green		White	Save to HW
	Adjust	0	<u>1.000</u>		1.000	Save to user area Restore to user Saved to File

- a. Select a communication port and screen.
- b. Select a position to display image, including main screen and extended screen.
- c. To adjust dark or bright lines between modules, select **Module-level Adjustment**, set module size and then click **Drawing**. To adjust dark or bright lines between cabinets, skip this step.
- d. On the topology, select a target to adjust.

Selection methods: Click borders and corners, click and drag the mouse to select borders and corners, or double click borders to select pixels.

Deselection methods: Click selected borders and corners to deselect them or click is to deselect all the selected borders and corners.

Topology zooming: Click	2	or	2
TODOIOQV ZOOMING. GIICK		OI	

Selection options: Select **Row Direction** to select horizontal borders and corners by clicking and drag the mouse. Select **Column Direction** to select vertical borders and corners by clicking and drag the mouse.

- e. (Optional) Select **Display Serial Number**, **Lock Selection** or **Hide Topology Graph** to display the cabinet or module numbers on the display window and lock or hide the topology.
- f. Select **Red**, **Green and Blue Priority** to adjust the coefficients of red, green and blue, or select **White Priority** to adjust the overall coefficient.
- g. After the settings are done, click Save to HW to save the configuration to receiving cards.
- h. (Optional) Click Save to File to save the configuration as a file.

Notes



- Clicking **Save to user area** saves the configuration to the application areas of receiving cards.
- Clicking Restore to user area restores the configuration of dark or bright lines according to the application areas of receiving cards.

Supported receiving cards: Ax series, MRV308, MRV328, MRV316, MRV366, DF30, Axs V4.4.0.0 and later

•	•	•				•						
O Sea	m Brightness Adjustment											- 🗆 X
Mod		Row (S)	Column (D)	Clea Deselect (F1) (F2)	, Clea (F12)	Show Sh	o ow Cali Q	· ·	o 1 10w Screer		Window Color (Alt+C)	200 € Screen Brightness (- +)
Scre	en1											►Q Q 1:1 🗔
					1	2 3	4	5				
					6	7 8 12 13	9	10				
					16 21	17 18 22 23	19	20				
									1000	(
::	Selected Area Parameter		0.3	<u>1.00</u>		1.000 🗘 Pre	ision O.	0 0 5				eed a video source) They cannot be use
												Save to HW
	Disable					ration o	r brig	htness	s calibr	ation.		
).	Click or sele	ect the	borders t	o be adjus	sted.							
	E: Select	all the b	borders.									
	E: Select	horizon	ntal borde	rs.								
	: Select v	vertical	borders.									
	: Show	or hide	the flash	ing dotted	borde	rs on th	e disp	olay wi	indow.			
	No.: Show o	or hide	module c	or cabinet	numbe	rs.						
	Q: Zoom c	out the	topology.									
	(Q: Zoom ir	1 the to	pology.									
	1:1: Map the	o topolo	ogy to the	display w	indow	(1:1).						
	: Auto fit	the top	ology to	the canva	S.							
	Set the pred	cision o	of adjustm	nent and d	rag the	slider t	o adj	ust the	e coeffi	cient.		

g. After the settings are done, click **Save to HW** to save the configuration to the hardware.

6.5 Correct Brighter Pixels

Applications

Correct brightness of pixels that are brighter or darker than normal to fix the problem that the pixel brightness of the screen is not uniform after calibration.



Applicable Products

All receiving cards and sending cards

Figure 0.04 Drighten sinch serves the

Prerequisites

Cabinets of the screen are calibrated or the entire screen is calibrated and the cabinet or screen calibration database file is saved.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose **Tools** > **More** > **Brighter Pixel Correction**.

			- 0
pology Simulati] Sho 🛛 🗹 Show 🛛 💽 💽	Select Display Display: 1	
		Display Main Screen b	O Extende
		Import Database	0.007
		Database 🖲 Cabinet	O Full
		Database	Bro
		Cabinet:	~
			Read Coeffic
		Coefficie Advanced	
		Select	Re
		No. Colum Row	Red Green B
		Averade	
		R: B	
		Upload Save to	HW Save Da

- Step 2 Select a screen.
- Step 3 Select a position to display image.
- Step 4 Set the brightness of the display window.
- Step 5 Select a database type, for example, Cabinet.
- Step 6 Click Browse and select a database file. For example, select a cabinet calibration database file and click Open.
- Step 7 On the Topology page, select an area and then select the Simulation Diagram tab.
- Step 8 Click brighter pixels or select the area where there are brighter pixels and click V.
 - Click to select a brighter pixel.
 - Elect brighter pixels by clicking and dragging the mouse to form a selection box.
 - Select brighter pixels by clicking and dragging the mouse to form a selection oval.

Figure 6-22 Selecting brighter pixels

🖳 Brighter Pixel Correction				-		×
Topology Simulat.	Select Display Display:	4				
ropology contrata	Display	 Main 	0	Extende.		
	Screen b				30%	
	- Import Databa	se				
	Database	Cabine		Full		
	Database	G:LCT资料	优化viangti	CLB.db	Brow	vse
	Cabinet	1-1			~	_
				Geod	Coefficie	
				Read	JUBILICIE	ms
	Coefficie	Advanced				
	Select				Rese	at 🛛
	N0.	Colun Ro	w Red	Green	Blue	^
	☑ 1	34 15	2047		2047	
	2	34 16	2047		2047	
	23	34 17	2047		2047	
	4	34 18	2047		2047	
	 ✓ 5 ✓ 6 	34 19 35 15	2047		2047	
	₩ 6	35 15 35 16	2047		2047 2047	
		35 10	2047		2047	
	<u>□</u> 9	35 18	2047		2047	~
					~	
		0			10	90%
		Average R:2047 G:20-				
		n.2047 0:20	+7 0.2047			
				_		
	Upload	Sav	e to HW	Sar	ve Datak	b

Step 9 Select Coefficient Adjustment or Advanced to adjust coefficients.

Step 10 After the settings are done, click **Upload** to save the configuration to the hardware.

Step 11 Click Save to HW to save the configuration to the hardware.

Step 12 (Optional) Click Save Database to save the configuration to the current database file.

6.6 Set Advanced Color

Applications

Improve the display effect of a screen by setting screen brightness, color space, color temperature, etc.

Applicable Products

- Color adjustment: Applicable to the NovaPro HD
- Other functions: Applicable to all sending cards

Prerequisites

None

Related Information

None

Operating Procedure

- Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".
- Step 2 Choose Settings > Advanced Color Configuration.
- Step 3 Click **Import** to quickly complete the configuration or continue performing the following operations to complete the configuration manually.
- Step 4 On the Factory Setting tab page, adjust parameters and then click Save to HW.



dvanced Col	or Configuration	– 🗆 X
Screen	USB@Port_#0002.Hub_#0001-Screen1 v Export	Refresh
Factory Setting	Configure Color Space Color Temperature Table Color Adjustment	
Current C	ain	
R	¢	> 100 %
G	¢	> 100 %
в	¢	> 100 %
_ s	ynchronize	DefaultValue
RGB Brig	htness	
R	¢	> 255 (100.0%)
G	¢	> 255 (100.0%)
в	¢	> 255 (100.0%)
🗆 S	ynchronize	
		Save to HW
:019/12/4 11:0	14:38The screen information has been read successfully	
	rmation has been read successfully	

- Current Gain: This is a module parameter and can be set when supported by module chips. Clicking **Default Value** can reset the value.
- RGB Brightness: This is a receiving card parameter.

If Synchronize is selected, the R, G and B parameters will be set to the same value.

Step 5 Select Configure Color Space to set color space.

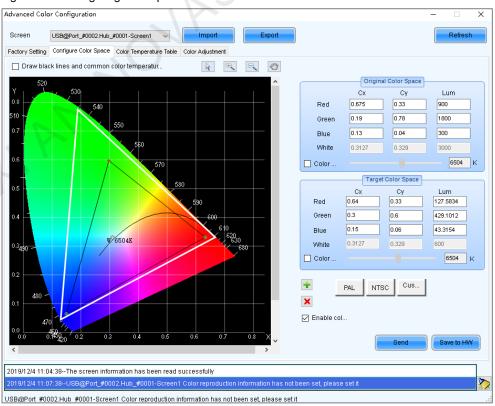


Figure 6-24 Configuring color space

1. Set the original color space.

The white triangle represents the original color space. The target color space is configured based on the original color space. You are advised to use a colorimeter to measure the original color space of the screen and then enter the measured values in the original color space table.

- 2. Perform any of the following operations as required to set custom color space.
 - Select a standard color space

Click **PAL** or **NTSC** to use one of the standard color spaces.

Select an existing custom color space

If there is a custom color space, click to use it. If not, click Import to import a custom color space, or click

to create a custom color space and then click to use it.

Adjust the color space diagram manually

Drag vertexes of the black triangle in the diagram on the left to adjust the target color space. If **Draw black lines and common color temperature point** is selected, a black curve (color temperature curve) and some common color temperature points (solid round spots) will be displayed in the diagram.

Adjust the color space values manually

Change the parameter values in the target color space table for precise adjustment.

- 3. After the configuration is done, select **Enable color space adjustment** to apply the target color space, and click **Send** to send the configuration information to the hardware.
- 4. Click **Save to HW** to save the configuration to the hardware.
- Step 6 Select Color Temperature Table to set color temperature.

Figure 6-25 Color temperature table

Advanced Color Configuration							×
USB@Port_#0002.Hub_#00	101-Screen1 V	Import	Export			Refres	h
Factory Setting Configure Color Space C	olor Temperature Table	Color Adjustment					
Operation prompts							
The color temperature name box of		erature section is yello	N				
Add'- add color temperature section							
Delete'- delete the selected color te Edit'- to edit the selected color temp		uding the deletion of th	a calected row class	r the information in t	he current color term	orature caction)	
Lait - to east the selected color territ	erature section (incl	during the deletion of th				Jerature Section)	
Color temperature Brightness valu	e Rgain	G gain	B gain	R brightness	G brightness	B brightness	
Add Edit Delete	Clear					Saved to lo	cal
2019/12/4 11:13:40Read Receiving Ca	rd Parameters,Resi	ults -Successful					^
2019/12/4 11:13:40The screen informa	tion has been read	successfully					~ 🔊
The screen information has been read s	uccessfully						.:

- 1. Click Add to open the dialog box shown in Figure 6-26.
- 2. Click **Add Brightness** to open the dialog box shown in Figure 6-27.
- 3. Add color temperature information corresponding to specified brightness values.

Current Gain is a color temperature parameter of modules. The parameter can be set when module chips support current gain. **Brightness Component** is a color temperature parameter of receiving card. If **Synchronize** is selected, the R, G and B parameters will be set to the same value. You can edit, delete and clear the color temperature information if necessary.

4. After the configuration is done, click Save to local to save the custom color temperature.



Figure 6-26 Adding color temperature information

Add Color Ten Color Temper		formation					×
Brightness	Red gain	Green gain	Blue gain	Red brightness	Green brightness	Blue brightness	Add Brightness
100%	100.00%	100.00%	100.00%	255(100	255(100	255(100	Edit
							Clear
							OK Exit

Figure 6-27 Adding brightness information

Add Brightness Information	×
– Set Color Temperature Information – Brightness Value 📴 🕺 %	
Current Gain	
R	> ~ %
G	> ~ %
Β <	> ~ %
🖂 Synchronize	
Brightness Component	
R <	> 229 ≑ (89.80%)
G <	> 229 🚖 (89.80%)
₿ <	> 229 🗘 (89.80%)
Synchronize	S
Add	Exit

Step 7 For the NovaPro HD, select **Color Adjustment** to set the hue, contrast and saturation of the screen. This function is not available for other products.

Figure	6-28	Adjusting color	
rigule	0-20	Aujusting color	

anced Cold	or Configuration					-	×
reen	USB@Port_#0002.Hub_	#0001-Screen1 V	Import	port			Refresh
tory Setting	Configure Color Space	Color Temperature Table	Color Adjustment				
Hue Adjustr	nent						
Hue	٢				>	0	
ContrastAd	justment						
Contras	it <				>	<mark>50</mark> %	
Saturation A	djustment						
Saturati	on <				>	50 %	
0// 0/2 67-	20.50 The even whether					C	
		rmation has been read s	accessiony				>
screen info	ormation has been rea	d successfully					

Step 8 (Optional) Click Export to save the configuration as a file.

6.7 Adjust Screen Effect

Applications

Enable 18bit+, ClearView and low latency, and set HDR parameters to improve display effect.

Applicable Products

- 18bit+: Applicable to the A5s Plus, A7s Plus, A8, A8s, A10s Plus and DH7512 receiving cards
- ClearView: Applicable to the A8, A8s and A10s Plus receiving cards
- Low latency: Applicable to the A5s Plus, A6s, A8s, A10s Plus and AT60 receiving cards
- HDR: Applicable to the sending cards that support 10-bit or 12-bit input sources

Prerequisites

- During HDR settings, the hardware must support HDR and an HDR10 or HLG input source is also required.
- HDR and ClearView cannot be enabled simultaneously.
- Low latency and 3D function cannot be enabled simultaneously.

Related Information

18bit+ can improve LED display grayscale by 4 times, avoiding grayscale loss due to low brightness and allowing for smoother images.

ClearView make texture, size, and contrast adjustments on different areas of the display image, creating a more realistic image.

Enabling either sending card low latency or receiving card low latency can reduce the delay by one frame. Enabling both can reduce the delay by two frames.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK.

The default password is "admin".

Step 2 Choose Settings > Adjust screen effect to open the dialog box shown in Figure 6-29.

Figure 6-29 Screen effect adjustment

djust screen effect						-		×	
SB@Port_#0001.Hub									
Parameter Setting:	6								
_	1					Ray	e to HW		
Enable				-	0	Loav	5 10 1 10 9		
🗌 Enable sendi	na car	🗌 Enab)le receivina c	ar					
HDR Parameter S	ettings								
Enable			\sim		(Resto	re defau	ults	
Peak Screen	<			> 10	000 cd/n	n2			
Ambient Light:	<			> 3	0 Lux				
Low Graysca	<			> 1	5				
Tip: Curren	t source is not	HDR10. Pleas	se connect ar	HDR1	0 video :	source			
0									
Screen Information						~			
2020/1/19 16:03:1		-		ieters s	uccessi				
2020/1/19 16:03:1									
2020/1/19 16:03:1	7HDR parar	neters read su	accessfully.						
						\checkmark	Clea	ar	
									1

- Step 3 Perform any of the following operations as required.
 - Enable 18-bit mode (18bit+)

Select Enable 18-bit mode and click Save to HW.

Enable ClearView

Select Enable ClearView, drag the slider to adjust the value and then click Save to HW.

Enable low latency

Select **Enable sending card low latency** and **Enable receiving card low latency** or either of them, and click **Save to HW**. Enabling either of them can reduce the delay by one frame. Enabling both can reduce the latency by two frames.

Set HDR parameters

Select Enable, select HDR10 or HLG from the drop-down box and complete relevant settings.

🗹 Enable	HDR10		\sim		Restore defaults
Peak Screen	<			>	4835 cd/m2
Ambient Light:	<			>	40 Lux
Low Graysca	<			>	26

6.8 Set Image Booster Engine

After the receiving card parameters are adjusted and the configuration file is generated, you can use the Image Booster Engine to further improve the display effect.

6.8.1 Screen Calibration

Applications

Use a colorimeter to measure the LED screen and set the Image Booster Engine functions to improve the display color and grayscale precision, and allow for free switching of display color gamut.

Applicable Products

- Color management and 18bit+ functions: Applicable to the A5s Plus and A7s Plus receiving cards
- Color management, precise grayscale and 22bit+ functions: Applicable to the A8s and A10s Plus receiving cards

Prerequisites

- The receiving card program package is updated.
 - A5s Plus and A7s Plus: V4.6.4.0 or later
 - A8s: V4.6.5.0 or later
 - A10s Plus: V4.6.5.0 or later. For detailed operation, see the NovaLCT V5.3.1 user manual.
- The original display color gamut can be measured manually or automatically. To measure it automatically, you must use the supported colorimeter and finish the colorimeter hardware connection.

Currently supported colorimeters: CA-410, CS-150, CS-100A and CS-2000

<u>Notice</u>

Adjusting receiving card parameters affects the display effect.

Related Information

The Image Booster Engine has the following 4 functions which improve the display effect (the actual effect depends on the driver IC) from different dimensions.

Color Management

Allow you to freely switch the color gamut of LED display between multiple color gamuts to let the colors be displayed more precisely. Apart from the standard and custom color gamuts, this function also supports the "LED.recommend" color gamut which is specially launched by NovaStar for the LED display.

Precise Grayscale

Correct the 65,536 levels of grayscale (16bit) of driver IC individually to fix the display problems at low grayscale conditions, such as brightness spikes, brightness dips, color cast and mottling. This function can also better assist other display technologies, such as 22bit+ and individual Gamma adjustment for RGB, allowing for a smoother and uniform image.

22bit+

Improve the LED display grayscale by 64 times to solve the grayscale loss problem due to low brightness and allow for more details in dark and bright areas, presenting a smoother image.

18bit+

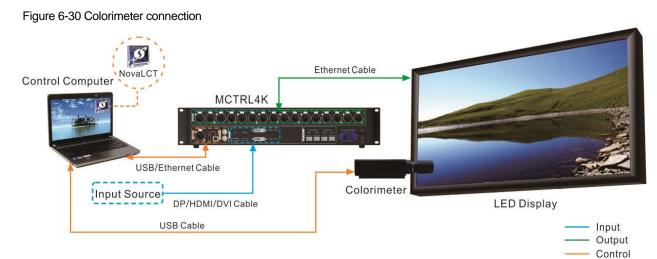
Improve the LED display grayscale by 4 times to effectively handle the grayscale loss problem due to low brightness, presenting a smoother image.

When you measure the color gamut and grayscale of LED screen, you must use the colorimeter to collect the grayscale data of red, green and blue in order. The supported colorimeters are described in Table 6-1. Figure 6-30 uses the CA-410 as an example to show the hardware connection.

Model	Measurement Distance (Darkroom)	Data Collection Speed
CA-410 (Recommended)	Touch the screen	About 7 min
CS-150	30 cm	About 3–4 h
CS-100A	1 m	About 3–4 h
CS-2000	1 m	About 3–4 h

Table 6-1 Colorimeters





Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

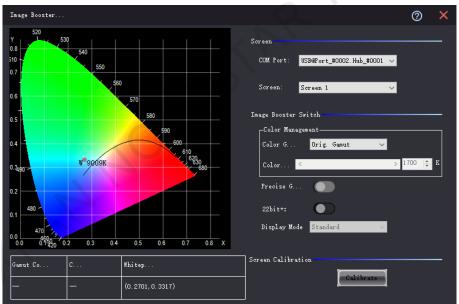
The default password is "admin".

Step 2 On the main window, click next to the rightmost function icon to open the drop-down list and then click

Image Booster Engine

Step 3 Select a communication port and a screen that you want to calibrate.

Figure 6-31 Image Booster Engine



If the connected receiving card supports the 18bit+ function, the **22bit+** displayed on the user interface will become **18bit+**. The **22bit+** user interface is used as an example in all the following operations.

Step 4 Click Calibrate to open the function page.

If you have finished colorimeter hardware connection, NovaLCT will automatically establish communication connection with the colorimeter. When you see Connected at the upper right, the connection is successful, as shown in Figure 6-32.

If the connection fails, see 12.4 Failed to connect colorimeter to troubleshoot the problem. To disconnect the colorimeter, click **Disconnect**.

• If you have not connected a colorimeter, the function page is as shown in Figure 6-33.



Figure 6-32 Colorimeter connected

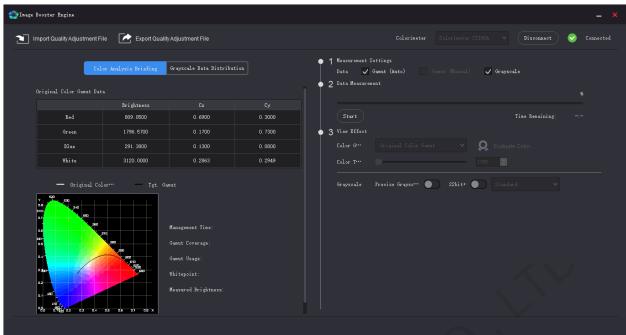


Figure 6-33 Colorimeter not connected

Image Booster Engine					
Import Quality Adjustment I	File 📝 Export Quality A	Adjustment File			Colorimeter CS100A 🗸 Connect 🔀 Not conn
C	lor Analysis Briefing	ờrayscale Data Distribu	tion	● 1 Measurement Settings Data Gamut (Auto) ✓ <u>Gam</u>	
				• 2 Data Measurement	
Original Color Gamut Da					
	Brightness				
Red	809.0500	0.6900	0.3000		Time Remaining: -:-
Green	1796.5700	0.1700	0.7300	• 3 View Effect	
Blue	291.3800	0.1300	0.0800		 Q Evaluate Color
White	3120.0000	0.2863	0.2949	Color T	
- Original C		it Management Time: Manut Coverage: Manut Usage:		Grayzoile Frecize Grayzo" 🌑	22bit+ 💽 Stundard V

Step 5 Do one of the following operations as required.

- If you do not have an image quality adjustment file, go to Step 6.
- If you have the file (.vglcx/.vglc), click **Import Quality Adjustment File** and go to Step 7.

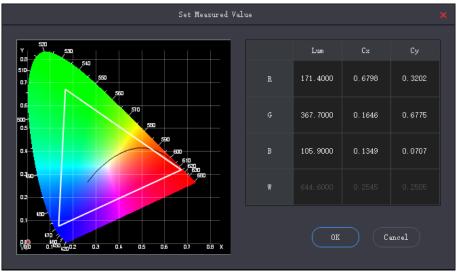
Step 6 Measure the display and transfer the measured data to the receiving card.

- Automatic measuring: Use the colorimeter to automatically measure the original color gamut. For the A8s receiving card, you can also choose to measure the grayscale.
 - a. Select Gamut (Auto). For the A8s, you can select Grayscale at the same time, if necessary.
 - b. Click Start to start measuring and transferring the measured data to the receiving card.
- Manual measuring: Manually measure and fill in the original color gamut values.
 - a. Select Gamut (Manual) and click the text link next to it.
 - b. On the Set Measured Value page that appears, double click the value and enter the measured value.

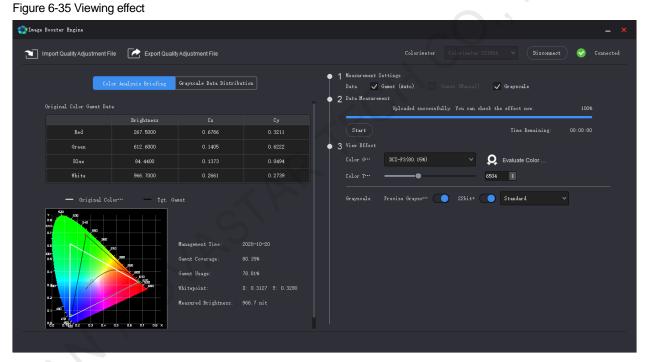
c. Click **OK** to transfer the measured data to the receiving card.



Figure 6-34 Setting measured value



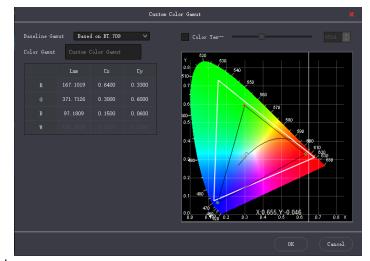
Step 7 In the View Effect area, set the Image Booster Engine related parameters and view the effect on the screen.



Color Gamut

Select a color gamut from the drop-down list. If you want to add a custom color gamut, do the following.

a. Click 🚺 at the end of the drop-down list to open the Custom Color Gamut page.





- b. Select a baseline gamut.
- c. Set the color gamut name. The name cannot begin with a number.
- d. Double click the cells to change the values, or adjust the black triangle in the color gamut diagram. If you want to adjust the color temperature value, select **Color Temperature** and set it.
- e. After the settings are done, click **OK**.

The total number of color gamuts cannot be greater than 19. You can click 📕 to delete gamuts.

Color Temperature

Drag the color temperature slider to set the color temperature, or set it in the spin box.

Precise Grayscale

Turn on or off this function.

18bit+/22bit+

Turn on or off this function.

Display Mode

Select Standard, Grayscale preferred, or Low-grayscale optimized.

After you select a gamut, the Color Analysis Briefing tab page will display the related information.

- Management Time: The date when the measuring is done
- Gamut Coverage: The LED screen color gamut coverage of the target color gamut, expressed as a percentage
- Gamut Usage: The LED screen color gamut coverage of the original color gamut, expressed as a percentage
- Whitepoint: The coordinates of white in the color gamut diagram
- Measured Brightness: The maximum brightness of whitepoint. Different color gamuts have the same maximum brightness of whitepoint.
- Step 8 Repeat Step 7 to change settings until the display effect meets the actual needs.

These settings are the final display effect configurations.

Step 9 (Optional) Click Export Quality Adjustment File to save the configuration information as a file.

Step 10 If you want to evaluate the color precision, do the following:

1. Click Evaluate Color Precision.

			Color Evaluation			
Color Evaluation						
Evaluate Gamut DC	I-P3 V					
Start Evaluation					Auto Switching Interval 25	
Standard Color	Color Value	CIE31 (Lxy)	Measured Value Before …	DeltaE	Measured Value (Lxy)	DeltaE
	#745244					
	#d9792f					
	#2e3e95					
	#f6f3ed					
	#c49582					
	#455ca3					
	#45924a					
	#c8c8c7					
	#5c799b					
	#c65562					
	#b12d38					
	#9e9e9f					
	#5b6b45					
	#5a3d67					
	#ebc32f					
	#777978					
	#827fac					
	#9db848					
	#bd5290					
	#535454					
	#5dbaa8					
	#e39e34					
	#0083a2					
	#363637					

- 2. Select a color gamut and click **Start Evaluation**.
- 3. After the evaluation is done, click **OK**.
- 4. Select Display Demo.



5. Click any of the colors in the table and check their effects on the LED screen. Or, you can set the auto color switching interval and then click **Start Demo** to check the effects of all colors on the screen.

			Color Evaluation			×
Color Evaluation						
Evaluate Gamut D	CI-P3 V					
Start Evaluation	Export Report			Display Demo	Auto Switching Interval 25	
Standard Color	Color Value	CIE31 (Ley)	Measured Value Before …	DeltaE	Measured Value (Lxy)	DeltaE
	#745244	301.1084, 0.3595, 0.3477	342.4000, 0.3185, 0.2972	21.10	298.8000, 0.3609, 0.3489	0.55
	#d9792f	465.5032, 0.4342, 0.4049	537.6000, 0.3982, 0.3591	22.57	462.6000, 0.4360, 0.4065	0.91
	#2e3e95	221.5052, 0.2342, 0.2234	245.8000, 0.1967, 0.1774	25.25	219.6000, 0.2337, 0.2232	0.27
	#f6f3ed	825.7895, 0.3155, 0.3319	928.2000, 0.2697, 0.2769	32.02	822.7000, 0.3152, 0.3318	0.22
	#c49582	537.3173, 0.3483, 0.3430	609.3000, 0.3058, 0.2912	26.23	534.1000, 0.3486, 0.3435	0.31
	#455.ca3	313.6041, 0.2530, 0.2587	347.0000, 0.2112, 0.2077	26.46	311.3000, 0.2526, 0.2588	0.31
	#45924a	416.4897, 0.2965, 0.4179	448.4000, 0.2343, 0.3499	28.47	413.9000, 0.2969, 0.4205	0.88
	#c8c8c7	678.8510, 0.3131, 0.3296	760.4000, 0.2673, 0.2743	30.23	675.5000, 0.3127, 0.3297	0.29
	#5c799b	397.4107, 0.2746, 0.2986	438.7000, 0.2289, 0.2431	26.97	394.9000, 0.2744, 0.2990	0.33
	#c65562	379.9279, 0.3882, 0.3140	445.8000, 0.3546, 0.2731	21.87	375.9000, 0.3890, 0.3142	0.37
	#b12d38	258.3168, 0.4442, 0.3096	312.8000, 0.4189, 0.2782	17.32	254.5000, 0.4462, 0.3099	0.55
	#9e9e9f	536.7727, 0.3123, 0.3283	600.2000, 0.2666, 0.2732	27.91	533.0000, 0.3121, 0.3287	0.36
	#5b6b45	340.5750, 0.3277, 0.3807	375.4000, 0.2770, 0.3215	23.46	337.4000, 0.3287, 0.3830	0.83
	#5a3d67	240.9222, 0.3073, 0.2712	274.3000, 0.2697, 0.2259	21.93	238.6000, 0.3075, 0.2715	0.32
	#ebc32f	653.3165, 0.4121, 0.4520	733.9000, 0.3666, 0.3991	28.62	649.0000, 0.4127, 0.4540	0.93
	#777978	408.9675, 0.3118, 0.3300	456.5000, 0.2657, 0.2747	25.45	406.0000, 0.3118, 0.3309	0.51
	#827fac	445.6334, 0.2928, 0.2932	499.7000, 0.2500, 0.2415	27.22	442.5000, 0.2925, 0.2934	0.35
	#9db848	573.6304, 0.3560, 0.4310	632.8000, 0.3026, 0.3710	28.32	570.0000, 0.3566, 0.4334	0.95
	#bd5290	378.3084, 0.3490, 0.2733	443.9000, 0.3152, 0.2339	23.81	374.8000, 0.3486, 0.2735	0.48
	#535454	284.4359, 0.3116, 0.3290	316.8000, 0.2655, 0.2740	22.49	281.5000, 0.3118, 0.3309	0.83
	#5db 238	554.4133, 0.2694, 0.3437	601.3000, 0.2152, 0.2801	30. 78	551.6000, 0.2690, 0.3446	0.56
	#e39e34	561.6006, 0.4177, 0.4246	636.8000, 0.3760, 0.3746	25.45	556.6000, 0.4185, 0.4267	0.96
	#0083s2	351.2598, 0.1937, 0.2995	368.1000, 0.1381, 0.2319	31.69	348.9000, 0.1926, 0.3004	0.89
	#363637	183.6266, 0.3114, 0.3269	204.0000, 0.2652, 0.2729	19.20	181.0000, 0.3123, 0.3295	0.92

- CIE31: The standard value of brightness, Cx and Cy of the color
- Measured Value Before MGMT.: The measured value of brightness, Cx and Cy of the color in the original color gamut
- Measured Value: The measured value of brightness, Cx and Cy of the color in the target color gamut
- DeltaE: The deviation between the measured value and standard value
- 6. Deselect Display Demo, click Export Report to save the evaluation result as a file.

6.8.2 Quick Setting

Applications

Quickly set the Image Booster Engine functions to improve the display color and grayscale precision, and allow for free switching of display color gamut.

Applicable Products

- Color management and 18bit+ functions: Applicable to the A5s Plus and A7s Plus receiving cards
- Color management, precise grayscale and 22bit+ functions: Applicable to the A8s and A10s Plus receiving cards

Prerequisites

- The receiving card program package is updated.
 - A5s Plus and A7s Plus: V4.6.4.0 or later
 - A8s: V4.6.5.0 or later
 - A10s Plus: V4.6.5.0 or later. For detailed operation, see the NovaLCT V5.3.1 user manual.
- Before you set the precise grayscale and color management functions, the screen calibration must be done. For details, see 6.8.1 Screen Calibration.

<u>Notice</u>

After the Image Booster Engine settings are done, adjusting receiving card parameters will affect the display effect.



Related Information

The Image Booster Engine has the following 4 functions which improve the display effect (the actual effect depends on the driver IC) from different dimensions.

Color Management

Allow you to freely switch the color gamut of LED display between multiple color gamuts to let the colors be displayed more precisely. Apart from the standard and custom color gamuts, this function also supports the "LED.recommend" color gamut which is specially launched by NovaStar for the LED display.

Precise Grayscale

Correct the 65,536 levels of grayscale (16bit) of driver IC individually to fix the display problems at low grayscale conditions, such as brightness spikes, brightness dips, color cast and mottling. This function can also better assist other display technologies, such as 22bit+ and individual Gamma adjustment for RGB, allowing for a smoother and uniform image.

22bit+

Improve the LED display grayscale by 64 times to solve the grayscale loss problem due to low brightness and allow for more details in dark and bright areas, presenting a smoother image.

💠 18bit+

Improve the LED display grayscale by 4 times to effectively handle the grayscale loss problem due to low brightness, presenting a smoother image.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 On the main window, click in next to the rightmost function icon to open the drop-down list and then click

Image Booster Engine

Step 3 Select a communication port and a screen that you want to set.

Figure 6-36 Image Booster Engine

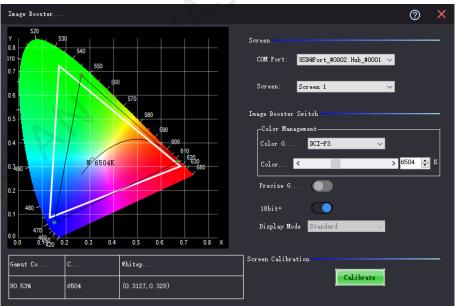
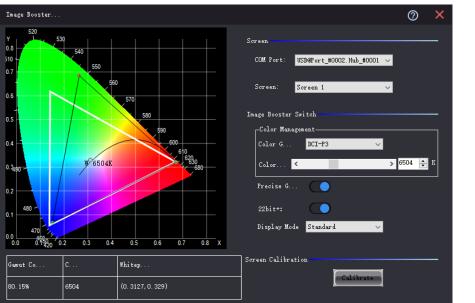


Figure 6-37 Image Booster Engine (A8s)



Step 4 Set the color gamut, color temperature and 18bit+ switch, and view the effect on the screen.

For the A8s, **18bit+** will become **22bit+**, and you can set the color gamut, color temperature, precise grayscale, 22bit+ switch and display mode, as shown in Figure 6-37.

After you select a gamut, the page will display the related information.

- Gamut Coverage: The LED screen color gamut coverage of the target color gamut, expressed as a percentage
- Color Temperature: The color temperature value
- Whitepoint Coordinates: The coordinates of white in the color gamut diagram

The display mode can be set to Standard, Grayscale preferred, or Low-grayscale optimized.

Step 5 Repeat Step 4 to change settings until the display effect meets the actual needs.

These settings are the final display effect configurations.

6.9 Batch Check Calibration Effects

Applications

Batch check the effects of disabling calibration, brightness calibration and chroma calibration of multiple devices.

Applicable Products

All receiving cards and sending cards

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 From the menu bar, choose **Tools** > **More** > **Device Settings**.



Figure	6-38	Batch	checking	calibration	effects

				×
Select Function	Select	COM Port	Device	Device Quantity
Restore calibration mode		USB@Port_#0002.Hub_#0001	MCTRL660 PRO	1
Enable/Disable calibration				
Disable calibration				
O Brightnes				
O Chroma calibration				
Select all	Select all			
				Setting

- Step 2 In the device list, select the device of which you want to check the calibration effects.
- Step 3 Select Enable/Disable calibration and click Setting.
- Step 4 Click **OK** to close the prompt box.
- Step 5 Select **Disable calibration**, **Brightness calibration** or **Chroma calibration** and check the corresponding display effects on the LED screen.

7 Screen Monitoring

7.1 Register Screens with VNNOX Care

- 7.1.1 Register Online Screens
- 7.1.1.1 Register via Saving Configuration Files (Recommended)

Applications

Register your online screens with VNNOX Care to perform centralized monitoring of the screen working status from a remote place.

Applicable Products

All receiving cards and sending cards

Prerequisites

- You have a valid VNNOX Care account.
- The control PC is connected to the Internet.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 7-1.

Figure 7-1 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	COM99 ~	
 Configure Screen 		
O Cloud Restore	~	
 Local Restore 		Browse
	Next	Close

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Screen Configuration page, click Save System Configuration File to open the dialog box shown in Figure 7-2.



💀 Save System Files to Cloud 🛛 🗙					
VNNOX Care Use					
Password					
Screen Name	USB@Port_#0002.Hub_#0001-Screen1				
System Config					
System Config	1 . Receiving card backup file				
	2、Screen connection file				
	3、Receiving card/NovaLCT				
	Save				
🖪 The screen is n	ot registered 🛛 American 🔻				

Figure 7-2 Saving configuration files

- Step 6 Enter your VNNOX Care user name and password, set a screen name and system configuration file name, and select a server node at the bottom right.
- Step 7 After the settings, click Save.
- Step 8 After successful saving, close the prompt box.

Notes

During registration, NovaLCT will automatically enable **Automatic Refresh** and **Link to NovaiCare** in the monitoring configuration. If you want to set the refresh period, please see 7.2.1 Monitoring.

7.1.1.2 Register via Function Buttons

Applications

Register your online screens with VNNOX Care, or modify the earlier registration information and then re-register the screens with VNNOX Care to perform centralized monitoring of the screen working status from a remote place.

Applicable Products

All receiving cards and sending cards

Prerequisites

- You have a valid VNNOX Care account.
- The control PC is connected to the Internet.

Related Information

When multiple screens are connected to the control PC, all these screens will be registered with VNNOX Care.

Operating Procedure

 $\sim \sim$

Step 1 Click Monitoring or choose **Tools** > **Monitoring** from the menu bar.



Figure 7-3 Monitoring type

Monitoring	×
~	1
Monitoring	Monitoring (Trial)
Monitoring	Monitoring (Trial)

Step 2 Click **Monitoring** to open the monitoring page.

You can also right click so on the desktop taskbar and select **Open MonitorSite** to open the monitoring page.

Figur	e7	7-4	Monitoring	
	×.,	<u></u>	1.00 5	

MonitorSite V2.6	_		
USB#Fort_#0003. Hub_#0001-Soreen1	7		
	Zooming		
Image: Constraint of the current Monitoring Data 15:13:41 Image: Constraint on the current Monitoring Data 15:13:41	• 0.40	\cdot	
	Normal		
	Fault		
	Voltage E		
Time of Acquiring the Current Monitoring Data 15:13:41	Unknown		
Statistical Information Total Quantity of Receivin 1			
Fault (alarm) Information		Monitoring R	
Quantity of Faulted Receiving 0 Quantity of Receiving Cards: 0		Configuration	
Soreen. Name 🧱 🔟 🚺 📳 😂 💙	U 🕄 📖		
USB@Port_#0003.Hub_#0001-Screen1	\circ \circ \circ	3	
Care status:Online			:

- Step 3 Click **Configuration** to open the **MonitorSite Settings** page.
- Step 4 On the Refresh Period tab page, select Automatic Refresh and set the refresh period.
- Step 5 Set the rereading times. 2 is recommended.
- Step 6 Select Link to NovaiCare, click Save and then OK.

Figure 7-5 Monitoring configuration

	MonitorSite - Sett	ings	×	
	Refresh Period	Refresh Period		
	Hardware Settings	Automatic Refresh Period: 60 🔃 S		
	Alarm	Set Rereading Times	-	
	Monitoring Con	When failing to read status, the 0 🖨 Times software will read		
	Email	Link to NovaiCare		
	Email Log	∠ Link to NovaiCare		
		Save		
Step 7	On the desl	top taskbar, right click 🔛, select Exit and click OK.		
	$\sim $			
Step 8	Click Monitorin	to start the monitoring function again.		

- Step 9 Click Cloud Monitoring or choose Settings > Cloud Monitoring from the menu bar.
- Step 10 Click Register in VNNOX Care.
- Step 11 Click Modify Registration.

Figure 7-6 Registration

Registration			>
Server: China		User:	Refresh
Screen Name	Width	Height	Registration State
USB@Port_#0002.Hub	64	32	3
I'A'	5		
			Modify Regis

Step 12 Select a server node, enter your VNNOX Care user name and password, and set the screen name.

Figure 7-7 Registration information

Courses Destination		×
Screen Registration		×
_	American 🗸	
Server	American	
User Name	Nova	
	·	
Password		
rassword		
Screen	001	
	Register	

Step 13 Click Register.

Step 14 After successful registration, click **OK** to close the prompt box.

7.1.2 Register Offline Screens

7.1.2.1 Register by Using Local Backup Files (Recommended)

Applications

During the process of saving the screen configuration data, save the configuration files to the local PC. When the control PC can access the Internet normally, use the backup files to register the screens with VNNOX Care.

Applicable Products

All receiving cards and sending cards

Prerequisites

You have a valid VNNOX Care account.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 7-8.

Figure 7-8 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	COM99 ~	
Configure Screen		
O Cloud Restore	×	
O Local Restore	Browse	
	Next Close	

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Screen Configuration page, click Save.
- Step 6 After successful saving, click **OK** to save the screen monitoring backup file to the local computer.

This step is related with the configuration of the save function. See 11.1 Configure the Save Function.

Figure 7-9 Successful saving

1	Information saved to hardware successfully. Do you want to back up the screen monitoring parameters?
-	OK Cancel

Step 7 After successful saving, click Close.

For devices with the same SN, NovaLCT uses the new file to overwrite the old file.

igure 7-10 Saved successfully
🖳 Prompt 🛛 🕹
Saved successfully.
The screen's system configuration file has been
saved locally. You can use the 🧧 Local Backup Files function on the main window to bind the screen
to VNNOX Care after the PC is connected to the
Internet.
Close .:

Step 8 When the control PC can access the Internet normally, click Cloud Monitoring on the main window and then click Local Backup Files to open the dialog box shown in Figure 7-11.



Loc	cal Backup Files				- 0
Save	after completing th	s the device system on the screen configurat: fter the PC is connec	ion. The backup file	is convenient for	
	Device SN	Device Model	Remarks	Saved	Binding Status
	9912310000999999	MCTRL1600		2021/12/24 15:36	Unbound

Step 9 Enter a remark.

The remark will be the name of the successfully bound screen. If the remark is empty, the device SN will be the screen name.

- Step 10 Select the backup file records of one or multiple devices and click Bind.
- Step 11 Enter your VNNOX Care user name and password, select a server node and click OK

After successful binding, the **Binding Status** of the corresponding device in the **Local Backup Files** dialog box becomes **Bound**.

Bind to VNNOX Care ×	Figure 7-12 Bind	ing to VNNOX Care		
Password	🔡 Bind to VNNOX C	are	$\langle \rangle$	×
Password OK		, A		
OK	User Name			
American 🔻	Fassword	OK		
			American	•

Related Operations



Both in the logged in and not logged in statuses, you can click ^{Cloud Monitoring} and then **Local Backup Files** to open its dialog box and check the device binding status and delete configuration files.

7.1.2.2 Register by Using Screen Monitoring Data

Applications

Export the configuration file of an offline screen. When the control PC can access the Internet normally, import the exported configuration file to VNNOX Care to complete screen registration.



Applicable Products

All receiving cards and sending cards

Prerequisites

You have a valid VNNOX Care account.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 7-13.

Figure 7-13 Screen configuration method

Screen Configuration			×
-Select Communication	Port		
Current Operatio	COM99	~	
Configure Screen			
O Cloud Restore		×	
O Local Restore			Browse
		Next	Close .:i

- Step 3 Choose a communication port.
- Step 4 Select Configure Screen and click Next.
- Step 5 On the Screen Configuration page, click Export Screen Monitoring Data to open the dialog box shown in Figure 7-14.

Figure 7-14 Exporting screen monitoring data

Export Screen Monitoring Data					
File Name					
Location	C:\Users\zlkf-gyO1\Desktop				
File Content	 Screen monitoring data Sending card backup file Receiving card backup file Screen connection file Receiving card/NovaLCT versions 				
	Save				

Step 6 Set a file name, click $\boxed{\hdotset{ }}$ to select a location and click **Save**. www.novastar.tech



Step 7 After successful saving, click **OK** to close the prompt box.

Step 8 When the control PC can access the Internet normally, log in to VNNOX Care.

Step 9 Go to My Services > Screen Management to enter the screen management page.

Step 10 Click Add Screen, select the exported screen monitoring data file and click Upload.

7.2 View and Configure Monitoring

7.2.1 Monitoring

Applications

View the monitoring information and configure the monitoring parameters to monitor the statuses of sending cards, receiving cards, receiving card temperatures, monitoring devices, as well as humidity, smoke, fans, power supplies, cables, cabinet doors, modules, iCare within the control system, in order to detect abnormalities and handle them in time.

Applicable Products

- Use monitoring card for monitoring: Applicable to the MON300 monitoring card. This card works with the MRV320 and MRV560 receiving cards.
- Use smart modules for monitoring: Applicable to the A4, A4s, A5, A5s, A5s Plus, A7, A7s, A7s Plus, A8, A8s, A9s, A10s Plus, XC200, XC100 and B4s receiving cards. The smart module monitoring function is a customized function of the receiving cards.
- Use hub products for monitoring: Applicable to the A4, A4s, A5, A5s, A7, A7s, A8, A8s, A9s, A10s Plus, XC200 and XC100 receiving cards. Using hub product for monitoring is an optional function of the receiving cards.

Prerequisites

- If you want to use the monitoring function of monitoring card, a monitoring card should be used between the module and receiving card.
- If you want to use the email service, the SMTP server address and port must be known in advance.

Related Information

When the monitoring card is used, hub monitoring and smart module cannot be used. Hub monitoring and smart module can be used simultaneously.

Operating Procedure

Click Monitoring or choose Tools > Monitoring from the menu bar. Step 1

Figure 7-15 Monitoring type

Monitoring	×
~~~	1
Monitoring	Monitoring (Trial)

Step 2 Click **Monitoring** to open the monitoring page.

You can also right click 🕍 on the desktop taskbar and select **Open MonitorSite** to open the monitoring page.



Figure 7-16 Monitoring		x
USB@Port_#0003.Hub_#0001-Soreen1		Zooming
		• 0.40
Image: Constraint of the current monitoring of the current monitoring the current monitoring of the curre		Normal
		Fault Voltage E
Time of Acquiring the Current Monitorin Statistical Information Total Quantity of Receivin 1	; Data 15:13:41	
Fault (alarm) Information           Quantity of Faulted Receiving Cards:	Quantity of Receiving Card with Voltage Exception: O	Monitoring R Configuration
Screen Name Screen VSB@Port_#0003. Hub_#0001-Screen1	<ul> <li>▲</li> <li>▲</li></ul>	
Care status:Online		

#### Notes

- Click **Monitoring Refresh** to manually refresh the monitoring information.
- On the desktop taskbar, right click and select **Reload Screen** to refresh the receiving card topology diagram.
- Step 3 Click the monitoring item on the left or at the bottom of the page to view the detailed monitoring information.
- Step 4 Click **Configuration** to set the monitoring parameters.

<b>4</b>	Refresh	Period

MonitorSite - Setti	ngs	
Refresh Period		
Hardware Settings	Refresh Period	
har uwar e Settings	Refresh Period: 5	
Alarm	Set Rereading Times	
Monitoring Con	When failing to read status, the software will read	
Email	Link to NovaiCare	
Email Log	∠ Link to NovaiCare	
		Save

Set the necessary items as follows and click **Save** to save the settings.

- Select **Automatic Refresh** to set the refresh period. The monitoring information will be refreshed based on the set time period. If the screen is registered with iCare, this item must be selected.
- Set the reread times when the reading of the monitoring information from the receiving card fails.
- Select **Link to NovaiCare** to enable iCare to get the monitoring information.

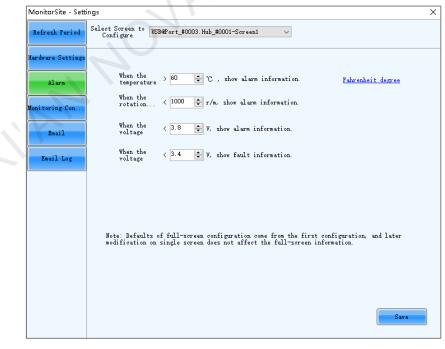
#### Hardware Settings

MonitorSite - Sett	ngs	×
Refresh Period	Select Screen to Configure USB@Port_#00003.Hub_#00001-Screen1 ~	
Hardware Settings Alarm Monitoring Con Email Email Log	<pre>configure Connect to Monitori Connect to MOB Monitoring Connect to Smart Module Connect to Sma</pre>	0.,
	Save	

Set the necessary items as follows and click Save to save the settings.

- Select Connect to Monitoring Card and set the monitoring items. Click Setting to set the number of monitoring cards connected to each cabinet. The number is 0 or 1.
- Select Connect to HUB Monitoring and set the monitoring items.
- Select **Connect to Smart Module** and set the monitoring items.
- Select Connect to HUB Monitoring and Connect to Smart Module, and then set the monitoring items.

#### 🕈 🛛 Alarm



Set the alarm thresholds for temperature, fan rotating speed and voltage. When the threshold value is exceeded, faults or alarms will be displayed. After the configuration is done, click **Save** to save the settings.

Monitoring Control



MonitorSite - Sett	ngs		×
Refresh Period	Select Screen to Configure USB@Port_#0003.Hub_#0001-Scre	en1 🗸	
Hardware Settings	Control Information List		
Alarm	Control type	Condition	
Monitoring Con			
Email			
Email Log			
	Add Edit Delete Clear list		OK

Set the rules for automatic control of smoke, temperature and dual backup power supply. If the control type is set to smoke, a multifunction card must be configured in advance. After the settings are done, click **OK**.

<del>\$</del> _	Ema	l

MonitorSite - Setting	gs	
Refresh Period	Enable Email Notification Send email when same fault/ 3	Times sending
	Enable System Recovery Notification	
lardware Settings	Enable Sending System Report Email	
	Send system report email regularly	
Alarm	Email Sender	
	Email Address novalct@novastar.tech Port 25	
nitoring Con	SMTP Server smtp. give. 163. com SSL Encryption Ene	11
		ble
Email	Modify Sender	Use Default
	Recipient	
Email Log	Name Email address	
	111 nova huixy@126.com	
	JA	
	-Email Information-	
	Email Information Sending Email A-1 (e.g.:Neighborhood A. Square B	
7	Sending Email A-1 (e.g.:Neighborhood A, Square B	
1		
Z	Sending Email A-1 (e.g.:Neighborhood A, Square B	

Select Enable Email Notification. Set the necessary items as follows and click Save to save the settings.

- Set the condition for sending an email notification, namely how many times the same fault or alarm occurs consecutively.
- Select Enable System Recovery Notification to send email notification when the fault or alarm recovers.
- Select Enable Sending System Report Email and click Send system report email regularly to set the email sending period and time.
- Click **Modify Sender** to change the email service related settings.
- Add, edit or delete the recipients.
- Set where the email is sent from.
- Email Log



MonitorSite - Sett	ings					×
Refresh Period	Log Time (	- 2019年12月	4日	•	Refresh	Delete Log
Mardware Settings	Notification Time	Recipients	Title	Notifi	ation Content	
Alarm						
Monitoring Con						
Email	•					
Email Log						
	<	abla lagal Weatl		ou can view the log.		>
	note, when you er	anne rocar Emair	notification, yo	ou can view the log.		



# 7.2.2 Monitoring (Trial)

## **Applications**

View the monitoring information and configure the monitoring parameters to monitor the statuses of sending cards, receiving cards, receiving card temperatures, monitoring devices, as well as humidity, smoke, fans, power supplies, flat cables, cabinet doors, modules, etc. within the control system, in order to detect abnormalities and handle them in time.

# Applicable Products

- Use monitoring card for monitoring: Applicable to the MON300 monitoring card. This card works with the MRV320 and MRV560 receiving cards.
- Use smart module for monitoring: Applicable to the A4, A4s, A5, A5s, A5s, A5s Plus, A7, A7s, A7s Plus, A8, A8s, A9s, A10s Plus, XC200, XC100 and B4s receiving cards. The smart module monitoring function is a customized function of the receiving cards.
- Use hub product for monitoring: Applicable to the A4, A4s, A5, A5s, A7, A7s, A8, A8s, A9s, A10s Plus, XC200 and XC100 receiving cards. Using hub product for monitoring is an optional function of the receiving cards.

## **Prerequisites**

If you want to use the monitoring function of monitoring card, a monitoring card should be used between the module and receiving card.

## **Related Information**

When the monitoring card is used, hub monitoring and smart module cannot be used. Hub monitoring and smart module can be used simultaneously.

## **Operating Procedure**

Step 1 Click Monitoring or choose **Tools** > **Monitoring** from the menu bar.



#### Figure 7-17 Monitoring type

Mo	onitoring	×
	~~~	1
	Monitoring	Monitoring (Trial)

Step 2 Click Monitoring (Trial) to open the monitoring page.

Figure 7-18 Monitoring (Trial)

Monitor	= ×
	+ (2' Refresh data
Alarm Info: Start reading the screen information. 2020-01-19 10:57:03	G V

Step 3 Add a monitoring page.

- 1. On the top right of the page, click +.
- 2. Right click the monitoring page name and choose **Rename** from the displayed menu. In the displayed menu, you can also choose to refresh or delete the monitoring page.
- 3. Enter a name and press Enter or click on the other position on the page.

If necessary, you can add multiple monitoring pages. The figure below has two monitoring pages added and their names are **Home0** and **Home1**, respectively.

Home0	Home1	+ 🗘 Refresh d
	1	
	+	
	•	



Step 4 Add a monitoring item.

In the dashed box, click + to open the Add Monitoring Item dialog box. 1.

			Add Monito	oring Item		×
		Type Real-Time Monitoring	Primary RV Card Backup RV Card Search USB@Port#0001.Hub_#0001-0	Grade ✓ Fault ✓ Alarm ✓ Normal		
			Title		Cancel Add	
Step 5	 2. 3. Chee 1. 2. 	Select the communicat The Backup RV Card Click OK . If necessary, you can a ck the monitoring inform Click Refresh data to Check the monitoring i	button is currently una dd multiple monitoring ation. obtain the monitoring ir	vailable. items.	click Add.	
		Monitor	niointation caninary.		=	×
		Home9 Home1 Real-Time Monitoring-USB@Port_#0001.Hub_#0001.0 Cabinet: Total: 1 Fault: 0 Alarm: 0	× H	-	. +	© Refresh data

The displayed items in the summary are relevant to the monitoring parameters. For configuration of monitoring parameters, see Step 6.

Description of the monitoring information summary:

- In the first row of the label, you can see the monitoring information, quantity and name of the sending card. _ In the figure above for example, you can see that the video source signal of sending card has a fault ($\overline{\Box}$), the Ethernet port is normal (⁽¹⁾), the sending card quantity is 1 and the name is MCTRL660_Pro.
- In the second row of the label, you can see statuses of the receiving card, receiving card temperature, monitoring device, humidity, smoke, fans, power supplies, flat cables, cabinet doors, modules, etc. The figure above indicates that the receiving card status is normal (!!!).

Description of icon colors:

- Green: Normal
- Yellow: Alarm



- Red: Fault
- Gray: Unknown
- 3. Click a monitoring item to check the detailed monitoring information.

Screen Screen Brightness 76/25 29.8% Ambient Light Unknown SB68-bort_50001 Sending Card Frimary USB8Port_50001Hub_50001-0 Conving Card Frimary USB8Port_50001Hub_50001-0 O O O O O O O O O O O O O O O O O O O	
Assended 1999	
Module	
	Show anomaly info only Fault Info: Working status Normal 1 Fault 0 Alarm 0

The displayed items in the detailed information are relevant to the monitoring parameters. For configuration of monitoring parameters, see Step 6.

Description of the detailed information:

- Check the screen brightness and ambient brightness.
- Check the monitoring information of the sending card.
- Check the monitoring information related with the cabinet, receiving card, module and transmission, and perform LED error detection on the module.
- Step 6 On the top right of the page, click _____ to configure the monitoring parameters.

	Monitoring Configuration	×
Monitoring Policy	Refresh Method	
Hardware Configuration		
Alarm Threshold	Refresh manually O Refresh periodically O Refresh on schedule	
Monitoring Control		
LED Error Detection	When failed to refresh monitoring data, refresh	
I'A	Save	

Figure 7-19 Monitoring configuration

Monitoring Policy

Select a refresh method and click Save after the settings are done.

- Refresh manually: Click Refresh data to manually refresh the monitoring information.
- Refresh periodically: Set the refresh period and the system will automatically refresh the monitoring information according to the set refresh period.
- Refresh on schedule: Set the rule of refreshing the monitoring information on schedule.
- When failed to refresh monitoring data, refresh xx time(s) again: Set how many times the system rereads the monitoring information from the receiving card when it fails to read the information.



Hardware Configuration

	Monitoring Configuration	\times
Aonitoring Policy	Select Screen USB@Port #0001.Hub #000 ~	
lardware Configuratic	Connected with monitoring card	
larm Threshold	Connected with Hub monitoring	
Aonitoring Control		
ED Error Detection	 Cabinet 	
	Use multiple power supplies for backup	
	^ Module	
	🗌 Flat cable 🔄 Module voltage 🔄 Module temperature	
	Save Apply to All Screens	

Perform any of the operations below and click Save or Apply to All Screens after the settings are done.

- Select Connected with monitoring card and set the monitoring items. Click Settings to set the number of monitoring cards connected to each cabinet. The number is 0 or 1.
- Select **Connected with Hub monitoring** and set the monitoring items.
- Select Connected with smart module and set the monitoring items.
- Select Connected with Hub monitoring and Connected with smart module, and set the monitoring items.

Alarm Threshold

	Monitoring Configuration	×
Monitoring Policy Hardware Configuratio	Select Screen USB@Port_#0001.Hub_#000 ×	
Alarm Threshold	Temperature	
Monitoring Control	-30 120 When temperatur 60 , C , show an alarm Set temperature scale of all to C .	
LED Error Detection	Fan Speed 0 20000 When speed < 1000 RPM, show an alarm 1000	
	Voltage 0 3.8 5.5 When voltage < 3.8 V, show an alarm When voltage < 3.4 V or > 5.5 V, show a fault	
4		
	Alarm Notification Method	
	Text on top Pop-up box in st Sound Flashing in template	
	Save Apply to All Screens	

Perform any of the operations below and click Save or Apply to All Screens after the settings are done.

- Set the alarm thresholds for temperature, fan rotating speed and voltage. When the threshold value is
 exceeded, faults or alarms will be displayed.
- Set the alarm notification method.
- Monitoring Control

		Monito	oring Configuration		>
Monitoring Policy	Select Screen	USB@Port_#0001.Hub_#000	v		
Hardware Configuratic	Con	dition	Action		1 ==
Alarm Threshold					~ ×
Monitoring Control	Avg temperature	✓ 0 °C ≤ Temperature <	0 ⁽ Adjust screen brightness	to 0 % Manage Power	× ^
LED Error Detection					
			Save	pply to All Screens	

Set the rules for automatic control of average temperature, maximum temperature, smoke and backup power supply. If the control type is set to smoke, a multifunction card must be configured in advance. After the settings are done, click **Save** or **Apply to All Screens**.

LED Error Detection Monitoring Configuration USB@Port #0001.Hub #000 Select Screen Monitoring Policy Hardware Configu Open circuit detection Detection Type Alarm Threshold Threshold Voltage ⊖ 4l eve O 3Level Monitoring Control ✔ Current gain Red Greer Blue + 20% Apply to All Screens Save

Set the LED error detection parameters. After the settings are done, click **Save** or **Apply to All Screens**.

Detection Type: The detection types supported by the driver chip

Threshold Voltage: The level of the threshold voltage of the driver chip, which can be set based on the information provided by the screen manufacturer

Current gain: Select whether to enable the current gain function. You can adjust the current gain.

4

8 Screen Management

8.1 Multi-function Card Management

Applications

Configure the multifunction card, and perform power management, monitoring data viewing, peripheral settings, program loading and audio management.

Applicable Products

The MFN300 multifunction card

Prerequisites

Hardware connections for the multifunction card are done.

Related Information

None

Operating Procedure



Step 1 Click Multi-function Card or choose Settings > Multi-function Card from the menu bar.

Figure 8-1 Multifunction card management

Multi-function Card Management	×
Add Remove Refresh Rename _₹ : + - X 22 1	Power Management Monitoring Data Peripheral Device Load Program Audio Management
IANNO	JASI

Step 2 Click Add and select the connection type for the multifunction card.

- Serial Port Connection: Select this option when the serial port of the multifunction card is connected to the USB port of the PC.
- Ethernet Port Connection: Select this option when the Ethernet port of the multifunction card is connected to that of the sending card or receiving card.

You can also remove, refresh or rename the added connections.

For serial port connection, you can perform the following operations:

- Modify Serial Port: Change the current serial port to the one that is not configured for the multifunction card.
- Replace Serial Port: Replace the current serial port with the one that is connected with the multifunction card.

Step 3 For serial port connection, choose a communication port and click OK.

For Ethernet port connection, choose a communication port and set other parameters as shown in Figure 8-2, and then click **OK**.

Figure 8-2 Adding	multifunction cards
-------------------	---------------------

Add Multi-function Carc	1		×
O			
Communication Port	USB@Port_#0003.Hub_#0001	~	
Sending Card	1	-	
Ethernet Port	1	-	
Name			
ОК	Exit		

Figure 8-3 shows the user interface of an Ethernet port connection that is added successfully. The following procedure takes Ethernet port connection as an example to illustrate the function.

Multi-function Card Management				>
Add Remove Refresh Rename	Power Managem	nent Monitoring Data P Management Board nursday 15:25:58	eripheral Device Load Prog	ram Audio Management Set Notes Start Delay
			Refresh	Start All Emergency St.
	Manual	🔿 Automati	🐚 🔘 Software Control	Advanced
	Switch 1	Start		
	Switch 2	Start Stop		
	Switch 3	Start Stop		
	Switch 4	Start Stop		
	Switch 5	Start Stop		
	Switch 6	Start Stop		
	Switch 7	Start Stop		
	Switch 8	Start Stop		
	2019/12/5 15:25:2	23Read the status of all	the powers in multifunction c	ard:Successful
			the powers in multifunction c	

- Step 4 Use any of the following functions as needed.
 - Power Management

Iulti-function Card Management				×	
Add Remove Refresh Rename Add Remove Refresh Rename Comparison of the second secon	Power Manage	ment Monitoring Data	Peripheral Device Load Progr	am Audio Management	
		er Management Board Fhursday 15:30:49	Read	Set Notes Start Delay	
			Refresh	Start All Emergency St	
	l Manual	🔿 Automati	 Software Control 	Advanced	
	Switch 1	Start Stop			
	Switch 2	Start Stop			
	Switch 3	Start Stop			
	Switch 4	Start Stop			
	Switch 5	Start Stop			
	Switch 6	Start Stop			
	Switch 7	Start Stop			
	Switch 8	Start Stop			
			ultifunction card:Successful	^	
	2019/12/515:30	:16FuncCard_SetPowe	rPortCtrlTotal:Successful		
ead emergency control status of power in mult	ifunction card:Succ	essful!			

- Read: Read the time from the multifunction card.
- Set: Set the multifunction card time to the PC time.
- Set Notes: Write notes for the power supplies.
- Start Delay: Set the delay time for powering on the multifunction card.
- Refresh: Read back the multifunction card information.
- Start All: Start all power supplies.
- Emergency Stop: Stop all power supplies. When the emergency stop operation is executed, automatic control is invalid.
- Manual: Start or stop the power supplies manually.
- Automatic Control: Set the auto start and stop time for the power supplies.
- Software Control: Set the power control schedule. Click Edit to customize the power control list. Click View Log to view the power control log.
 - Advanced: Set the time for the automatic time synchronization between the multifunction card and PC.

Monitoring Data

Iulti-function Card Management		×
Add Remove Refresh Rename + - X 22 1	Power Management Monitoring Data Peripheral Device Load Program Audio Manage	ement
ei⊶ Sending card-1	Onboard Monitoring Data	
2 F01-2	III Temperature 32°C	
	Humidity 25%	
	20 Voltage 5V	
	No monitoring card has been connected currently	
		Refresh
	2019/12/5 15:34:32Read temperature of monitoring card in multifunction card:Successful	
	2019/12/5 15:34:32Read all status of monitoring card in multifunction card:Successful	
		No. 10
ead all status of monitoring card in multifunctio	n card:Successful!	

View the monitoring data of both multifunction card itself and its connected monitoring card.

Peripheral Device

Add Remove Refresh Rename Add Remove Refresh Rename Comparing Card 1 Comparing		nitoring Data Peripheral Device Lo click 'Save' butto cation	
	Peripheral device 1	No external device 🗸 🗸	
	Peripheral device 2	No external device 🗸 🗸	
	Peripheral device 3	No external device \sim	
	Peripheral device 4	No external device \sim	
	Peripheral device 5	No external device \sim	
	Peripheral device 6	No external device \sim	
PL			Refresh

Add the peripheral devices connected to the multifunction card, including the light sensors and external 3D emitters.



Iulti-function Card Management		×	
dd Remove Refresh Rename ↓ ↓ ★ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Power Management Monitoring Data Peripheral D Multi-function Card Information Model of Multi-function C FPGA Version: FPGA Note of Multi-function Card		
		Ketresh	
d all status of monitoring card in multifunction	rard'Successful		

Click Refresh to view the multifunction card model, FPGA version and FPGA note.

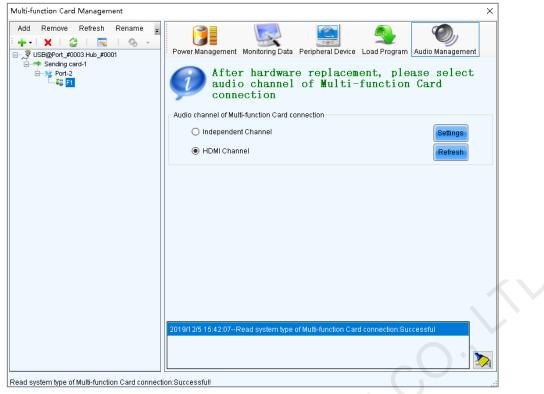
Type "admin" to access the the options for program loading.

- a. Select Load program for selected Multi-function Card or Load all programs for Multi-function Card.
- b. Click **Browse** to select the program package.
- c. Click Change to load the selected program.
- d. Click Exit to hide the program loading options.

Multi-function Card Management	
Multi-function Card Management	Power Management Monitoring Data Peripheral Device Load Program Audio Management Multi-function Card Information Model of Multi-function C FPGA Version: FPGA Note of Multi-function Card
	Load program for selected Multi-function Card(USB@Port_#00 Select Program Program Name Program Version Program Path Change
Read all status of monitoring card in multifuncti	

Audio Management





Set the audio channel connected to the multifunction card, including the independent channel and HDMI channel.

8.2 Multiple-screen Management

Applications

Combine multiple screens into a combined screen, allowing for easier brightness adjustment, screen calibration and monitoring configuration, and higher working efficiency.

Applicable Products

All receiving cards and sending cards

Prerequisites

None

Related Information

The combined screen supports both auto and manual brightness adjustment.

Operating Procedure

- Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click OK. The default password is "admin".
- Step 2 Choose Settings > Multiple-screen Management.

Figure 8	3-4	Multi-screen	management

figuration of Combined	Screen				-		×
Number of Combined	þ	-	Configuration	1	Clear		
				ОK		Close)

- Step 3 Set the number of combined screens and click Configuration.
- Step 4 Set the combined screen name and number of screens in the combined screen, and then click **Configuration**.

Figure 8-5 Configuration of combined screen

Configuration of Combined 9	creen		- 🗆 X
Number of Combined	1 😫 🖸	nfiguration	Clear
Combined screen 1			
Name:	Combined screen 1		
Number of Screen:	2 😫 🖸	nfiguration	Reset
Zoom:	<	> 0.2	
Size of Combined Scr	1280 x 480		
?			
I'AN			
		ок	Close

Step 5 Right click the first screen to pop up the window as shown in Figure 8-6. Choose a communication port and its associated screen.

Figure 8-6 Associated screen

•		
Currently operating screen information		
Comm	USB@Port_#0001.Hub_#000' $ \smallsetminus $	
-Screen lis	t of designated	
1		
_		
Associate	d Screen	
	Clear	

- Step 6 Do the same for other screens of the combined screen.
- Step 7 Drag the screen to snap it to other screens.

Figure 8-7 Adjusting screen position

guration of Combined S Number of Combined mbined screen 1	1 Configuration	Clear	×	
lame:	Combined screen 1			
lumber of Screen:	2 Configuration	Reset		
oom:	< >	0.96		
ize of Combined Scr	192 x 128			
:t_#0003.Hub_#0		(AR		

Step 8 After the settings are done, click **OK**.

8.3 Prestore Screen

Applications

Set the picture displayed on the screen during startup process, or displayed when the Ethernet cable is disconnected or there is no video signal.

Applicable Products

All receiving cards and sending cards

Prerequisites

A picture in BMP, JPG or PNG format is prepared.

Related Information

None www.novastar.tech



Operating Procedure

Step 1 On the menu bar, choose Settings > Prestore Screen.

Prestore Picture	Settings	>
Communication	Port Selection	
Communic	USB@Port_#0003.Hub_#0	\sim
Screen1		
Prestore Picture	e Settings	
Select Pi		Browse
Effect Settings		
Screen E	ffect Center	~
🔘 Single Ca	abin	Test Effect
Extende	Save to HW	Check Stored Picture
Function Setting	js	
Start-up Picture	-	
🔲 Enable	Time	30 🗘 Se
Disconnect Ca	ble	
🖲 Black	🔿 Last Frame	O Prestor
No DVI Signal -		
🖲 Black	🔘 Last Frame	O Prestor

Figure 8-8 Prestore picture settings

- Step 2 Choose a communication port.
- Step 3 Set a prestore picture.
 - 1. Click **Browse** to select a picture.
 - 2. Set the screen display effect and click Test Effect to view the actual effect.
 - Screen Effect: The selected picture will be stretched, tiled or centered to fit the screen.
 - Single Cabinet Effect: The selected picture will be stretched, tiled or centered to fit each cabinet of the screen.

Select **Extended Screen** to display the picture on the extended screen.

- 3. Click Save to HW to save the prestore picture to the hardware.
- 4. Click Check Stored Picture to view the current prestore picture.
- Step 4 Set the picture displayed during startup process, or displayed when the Ethernet cable is disconnected or there is no video signal.
 - 1. Select **Enable** in the **Start-up Picture** area and set how long the prestore picture is displayed for during the startup process.
 - 2. Set whether the screen is black, or displays the last frame image or prestore picture when the Ethernet cable is disconnected.
 - 3. Set whether the screen is black, or displays the last frame image or prestore picture when there is no video signal.
 - 4. After the settings are done, click **Send** to send the configuration information to the hardware.
 - 5. Click **Save to HW** to save the configuration information to the hardware.

8.4 Receiving Card Relay

Applications

Set the receiving card relay status to manually connect or disconnect the circuit or let the circuit automatically connect or disconnect, and reset the receiving card running time.



Applicable Products

- Setting the receiving card relay status: Applicable to the MRV350 receiving card
- Resetting the receiving card running time: Applicable to all receiving cards

Prerequisites

None

Related Information

When the relay is closed, the circuit is connected. When the relay is released, the circuit is disconnected. The running time is accumulated as the receiving card works, and will not be reset after the receiving card is powered off.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 Choose Settings > Receiving Card Relay.

Figure 8-9 Setting receiving card relay

Setting of Receiving Card Relay	– 🗆 X
Serial Port Selection	
Serial Port USB@Port_#0003.Hub_#0001	~
Screen1	
Parameter of Receiving Card Relay	
Disconnected	
Connected	
 Automatic 	
- Temperature Under Automatic Mode	N
	erature of 30 🔶 •C
Re	efresh
Receiving Card Timing Clearing	
Record Time 10Days 6Hours 5Mi	nutes
Re	efresh Timing Resetting

Step 3 Choose a communication port and perform the following operations as required.

- Set receiving card relay
 - Select Disconnected and click Send to disconnect the circuit.
 - Select Connected and click Send to connect the circuit.
 - Select **Automatic** and set the threshold temperatures for both connecting and disconnecting the relay, and then click **Send**.
- Reset receiving card running time

Click **Timing Resetting** to record the receiving card running time from 0.



8.5 Configuration Information Management

Applications

Import and export the NovaLCT configuration files for quick configuration in NovaLCT.

Applicable Products

N/A

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose Settings > Configure Information Management.

Figure 8-10 Configuration file management



- Step 2 Perform any of the following operations as required.
 - Import Configuration

Click Import Configuration, select a file in .zip format, and then click Open.

Export Configuration

Click Export Configuration, select the file save path and enter the file name, and then click Save.

8.6 Screen Control

Applications

Set the screen display status. Use the test pattern to perform the screen aging test and detect problems. Control the cabinet LCD backlight status.

Applicable Products

- Flipping: Applicable to the MCTRL660 PRO sending card
- Other functions: Applicable to all receiving cards and sending cards

Prerequisites

None

Related Information

None

Operating Procedure

Chan 4 Oliak

Step 1 Click see or choose **Tools** > **Screen Control** from the menu bar.



Figure 8-11 Screen control

Screen Control	×
USB@Port_#0003.Hub_#0001-Screen1	
Display Control Black Out Freeze	Normal
Self-Test: Normal 🗸	Send
Cabinet LCD Backlight Control	
Turn off cabinet LCD	Send
	Close

Step 2 Perform any of the following operations as required.

Set screen display

Select Black Out, Freeze or Normal. When Freeze is selected, the screen always displays the current image.

Select test pattern

Select a test pattern from the drop-down list and click **Send**. The receiving card will display the selected test pattern on the screen.

Set LCD backlight status

Select or deselect Turn off cabinet LCD and click Send.

Step 3 When the MCTRL660 PRO is connected, select a flipping option for the image of the Ethernet port as shown in Figure 8-12. The options include **Disable**, Left-Right, or **Top-Bottom**. If other devices are connected, skip this step.

Figure	8-12	Flipping
--------	------	----------

reen Control				
B@Port_#0003.Hub_#0001-Screen1				
Display Control				
Black Out	Freeze	Normal		
Self-Test: Normal	~	Send		
- Cabinet LCD Backlight Control -				
Turn off cabinet LCD		Send		
Flip				_
Select All		Disable	eft-Right Top-Bottom	
Communication Port	Sending Card	Port	Status	L
		Port1	Disable	L
		Port2	Left-Right	L
USB@Port_#0003.Hub_#0001	1	Port3	Top-Bottom	L
USD@POIL_#0003.Hub_#0001		Port4	Left-Right	L
		Port5	Top-Bottom	L
		Port6	Disable	I.



8.7 Controller Cabinet Configuration File Import

Applications

Save the receiving card configuration files to the sending card, so as to send the configuration files to the receiving card on site by using the configuration file import function of the sending card.

Applicable Products

- Importing cabinet configuration files: Applicable to the device-level sending cards
- Renaming device: Applicable to the NovaPro HD, VX2, VX4, VX4S, VX5s, VX6s, K4, K4S, K6s, VD43, VX2U, VX4U, K4U, K2U, VX2S, CVT4K-S, MCTRL4K, K16, H9, V1260, NovaPro UHD Jr, MCTRL1600, MCTRL R5, MCTRL660 PRO and E8000

Prerequisites

The receiving card configuration files in .rcfgx or .rcfg format are ready. The cabinet must be a regular cabinet, and cannot be in triple or quadruple strip output mode.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose Tools > Controller Cabinet Configuration File Import.

Figure 8-13 Importing cabinet configuration files

Import the Configuration File of Controller Cabinet × Select Serial Port COM3 Move Up Move Down Advanced C Add Configuratio. Delete Configur. Rename File Save the Chang			
Move Up Move Down Advanced C	Import the Configuration	File of Controller Cabinet	×
Move Down Advanced C Add Configuratio	Select Serial Port	COM3 ~	
		Move Down Advanced C	

- Step 2 Choose a communication port.
- Step 3 Click Add Configuration File, select a configuration file, and click Open.

You can add configuration files for multiple receiving cards as needed. You can also delete and rename the configuration file.

Step 4 If you need to specify one or multiple sending cards, click **Advanced Configuration**. Select the desired sending cards in the displayed dialog box, and click **OK**. If you want to save the configuration files to all the connected sending cards, skip this step.

Figure 8-14 Advanced configuration



- Step 5 After the settings are done, click Save the Change to HW to save the configuration files to the sending cards.
- Step 6 After the files are saved successfully, click **OK**.
- Step 7 If the renaming function is supported by device, you can rename the sending card as shown in Figure 8-15. If not supported, skip this step.

Select Serial Port USB@Port_#0002.Hub_#0001 Move Up Move Down Advanced C		ning sending cards	
Select Serial Port USB@Port_#0002.Hub_#0001 V	port the Configuration	n File of Controller Cabinet X	
Add Configuratio Delete Configur	Select Serial Port	USB@Port_#0002.Hub_#0001 Move Up Move Down Advanced C	
	Rename File	Save the Chang	
Rename File Save the Chang	Sending Card Name S	Setting	
	🗹 Enable Naming		
Sending Card Name Setting	Name		
Sending Card Name Setting Enable Naming Name	▶1 NovaStar		
Sending Card Name Setting Enable Naming Name	Rename	Save to HW	
Sending Card Name Setting Enable Naming Name Name NovaStar			
Sending Card Name Setting Enable Naming Name Name NovaStar			
Sending Card Name Setting Enable Naming Name Name Rename Save to HW	Select Enab	le Naming.	

- 2. Choose a sending card and click **Rename**.
- 3. Enter the new name that contains only letters, and click **OK**.
- 4. Click Save to HW.

8.8 Video Control

Applications

Select an input source type for the video controller, and set the input, output and stitching.

Applicable Products

The NovaPro HD video controller



Prerequisites

None

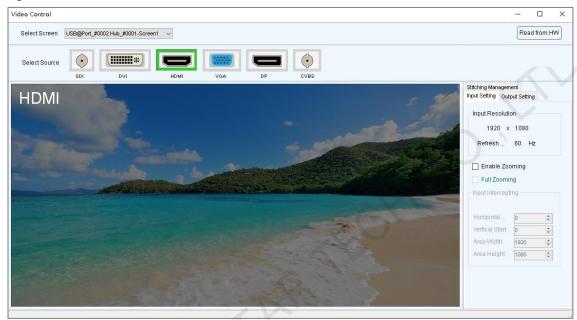
Related Information

None

Operating Procedure

Step 1 On the menu bar, choose **Tools** > **Video Control**.

Figure 8-16 Video control



- Step 2 Choose a screen.
- Step 3 Click an icon to select an input source.
- Step 4 Perform any of the following operations as required to set the video control related parameters.

Set input and output

Disable zooming

You can set only the position of the output window.

Enable zooming

Select **Enable Zooming** to set the input intercepting position and size, as well as the output window position and size.

The output window size must be smaller than or equal to the LED screen size.

Full zooming

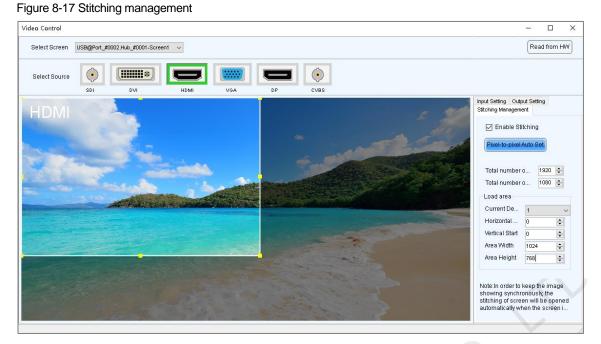
Select Enable Zooming and Full Zooming. Output parameter settings are not required.

The output image will be adjusted to the same size as the LED screen after this function is enabled.

- Set stitching
 - a. Select Enable Stitching to set the total number of pixels of the LED screen.
 - b. Set the position and size of the area loaded by current device, and then set the output window position and size. If you want to display the image in pixel-to-pixel mode, please click **Pixel-to-pixel Auto Set**.
 - c. Set the positions and sizes of the areas loaded by other devices, and then set the output window positions and sizes.

The total size of the areas loaded by all devices must be the same as the total pixel number of the screen.





8.9 Module ID Settings

Applications

Set ID for the module containing a flash memory.

Applicable Products

The receiving cards that support module Flash or smart module

Prerequisites

The Flash arrangement is completed as described in 5.7 Set Performance Parameters.

Related Information

Some modules do not support ID settings. For details, please contact NovaStar.

Operating Procedure

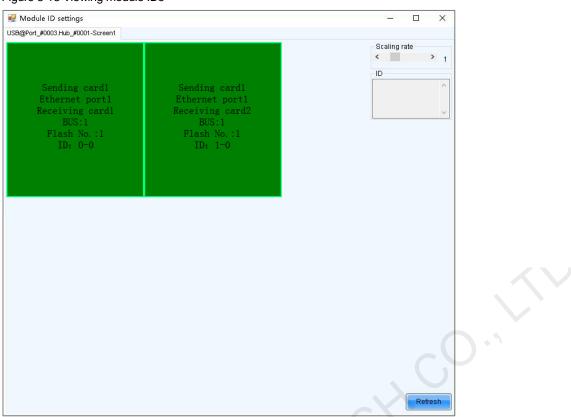
On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Step 1 Login.

The default password is "admin".

- Step 2 Choose Tools > Module ID setting.
- Step 3 Click Refresh to view the module IDs.

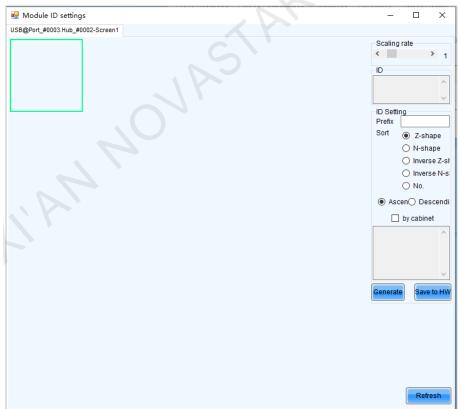


Figure 8-18 Viewing module IDs



Step 4 Type "admin" to access the ID setting pane.

Figure 8-19 Setting module IDs



- Step 5 Select the ID generation method. Click **Generate** to set IDs for all the modules, or double click a single module and set its ID in the displayed dialog box, and then click **OK**.
 - Prefix: Set the prefix of the module ID.
 - Sort: Select the sorting type for the module IDs.

- Z-shape: Generate module IDs from left to right for all the rows from top to bottom. The ID format is "receiving card number-module number".
- N-shape: Generate module IDs from bottom to top for all the columns from left to right. The ID format is *"receiving card number-module number"*.
- Inverse Z-shape: Generate module IDs from right to left for all the rows from top to bottom. The ID format
 is "receiving card number-module number".
- Inverse N-shape: Generate module IDs from top to bottom for all the columns from left to right. The ID format is "receiving card number-module number".
- No.: The ID format is "receiving card number-Flash number".
- Ascending: The module IDs are in ascending order.
- Descending: The module IDs are in descending order.
- By cabinet: Generate the IDs for all modules based on cabinets by Z type or N type, or number the modules by "sending card number-output port number-receiving card number-Flash number".

Step 6 After the settings are done, click Save to HW to save the configuration information to the hardware.

8.10 Sending Card Relay Settings

Applications

Set the status of the sending card relay to turn on or off the power of the receiving card.

Applicable Products

The KT8 sending card

Prerequisites

None

Related Information

When the relay is closed, the circuit is connected. When the relay is released, the circuit is disconnected.

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 Choose Tools > More > Sending Card Relay.

Figure 8-20 Sending card relay

🛃 Sending Card Relay Switch			×
Current Serial Port			
USB@Port_#0001.Hub_#0001 ~			
Sending Card List	Status	Operation	
Sending Card1	Disconnect	Start	

Step 3 Choose a communication port and a sending card.

Note: When the sending cards are cascaded, multiple sending cards are displayed in the list.

- Step 4 Check the relay status and perform the following operations as required.
 - Click Start to connect the circuit.



• Click Stop to disconnect the circuit.

8.11 Optical Port Settings

Applications

When automatic pairing between two CVT10 devices fails, set the optical ports of those devices respectively to make pairing succeed.

Applicable Products

The CVT10 fiber converter

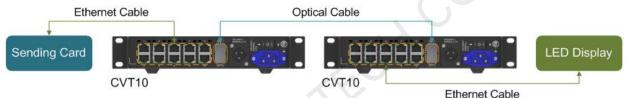
Prerequisites

None

Related Information

When the sending card has no optical ports, two CVT10 devices must be used for photoelectric conversion. The two CVT10 devices can pair automatically. After successful pairing, they can transmit data normally.

Figure 8-21 Photoelectric conversion between two CVT10 devices



Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 Choose Tools > More > Optical Port Settings.

Figure 8-22 Optical port settings

🖳 Optical Port Sett	ings		\times
Current COM Por USB@Port_#0003.1		*	
Function	Status	Operation	
Optical port	Disable	Enable	

Step 3 Choose a communication port.

Step 4 Click Enable.



9 Screen Maintenance

9.1 Hardware Program Update

Applications

Update the hardware programs for the receiving cards and sending cards.

Applicable Products

All receiving cards and sending cards

Prerequisites

The program update package is obtained.

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.

The default password is "admin".

Step 2 Type "admin" to pop up the program loading window as shown in Figure 9-1.

Figure 9-1 Program loading

orgram loading Select the communication port for operation Communication port for the current operati COM3 Device q 1 Reconnect Program updating Program Pat CODATA_A10s_V4.5.2.7 Browse Advanced Update Extend the operation item Read-back of received ardware Program Version Information Prefres O Refres Sendi 1 Outp 1 Refres Refresh Clear	-	e current communication port ha			
Communication port for the current operati COM3 Device q 1 Reconnect Program updating Program Pat G:DATA_A10s_V4.5.2.7 Browse Advanced Update Extend the operation item Read-back of receil. ardware Program Version Information Refres Sendi 1 Refres Refres Program Console Commution Console Image: Console Image: Console Image: Console	rogram loading —				
for the current operati Common Device q 1 Feedomeet Program updating Program Pat @:DATA_A10s_V4.5.2.7 Browse Advanced Extend the operation item Read-back of recei ardware Program Version Information © Refres © Refres Sendi 1 © Outp 1 © Recei 1 © Refres Refresh Tormation Console					
Program updating Program Pat ©NDATA_A10s_V4.5.2.7 Browse Advanced Update Extend the operation item Read-back of receil. ardware Program Version Information Refres © Refres Sendi 1 © Outp 1 © Recei 1 © Refres Refresh			~	Device q 1	Reconnect
Advanced Update Extend the operation item Read-back of recei ardware Program Version Information Refres O Refres Sendi 1 Outp 1 Refres Refresh Tormation Console	Program updating				
Extend the operation item Read-back of recel ardware Program Version Information Refres O Refres Sendi 1 Outp 1 Refres Refresh formation Console	Program Pat	G:\DATA_A10s_V4.5.2.7			Browse
Read-back of recei ardware Program Version Information Refres Refres Refres Refres Refres Refres Refres Refres Refres Refres Refres Refres	<u>Advanced</u>				Update
ardware Program Version Information Refres Refres Refres Refres Refres Refres Refres Refres Refres Refres Tormation Console Refres Refres Refres	Extend the operati	on item			
Refres O Refres 1 Refresh Refres Image: Comparison of the second	Read-back of rece				
Refres O Refres 1 Refresh Refres Image: Comparison of the second					
Refres O Refres 1 Refresh Refres Image: Comparison of the second					
formation Console		breign Information			
formation Console	ardware Program	ersion Information			
			0 1 🚔 Recei	1 🖨 🗆 Refre	s Refresh
			0 1 붖 Recei	1 🛓 🗌 Refre	s Refresh
			0 1 💼 Recei	1 💼 🗌 Refre	s Refresh
			0 1 🗭 Recei	1 💼 🗌 Refre	s Refresh
			o 1 🔹 Recei	1 🖨 🗌 Refre	s Refresh
			0 1 💌 Recei	1 🔹 🗌 Refre	s Refresh
			0 1 🚔 Recei	1 🚔 🗌 Refre	s Refresh
			0 1 💼 Recei	1 💼 🗌 Refre	s Refresh
			0 1 主 Recei	1 💌 🗌 Refre	s Refresh
			o 1 💌 Recei	1 🔅 🗆 Refre	s Refresh
			0 1 🚔 Recei	1 💼 🗆 Refre	s Refresh
			0 1 🚖 Recei	1 💼 🗌 Refre	s Refresh
			o 1 💽 Recei	1 🔹 🗆 Refre	s Refresh
			o 1 💌 Recei	1 🔅 🗆 Refre	s Refresh
Clear	Refres OR		0 1 💽 Recei	1 💼 🗆 Refre	s Refresh
Clear	Refres OR		1 📄 Recei	1 💼 🗆 Refre	s Refresh
Clear	Refres OR		o 1 💽 Recei	1 🔹 🗆 Refre	s Refresh
	Refres OR		o 1 💌 Recei	1 🔅 🗆 Refre	s Refresh
	Refres OR		o 1 💽 Recei	1 🔹 🗆 Refre	

Step 3 Choose a communication port.

If you need to reconnect the sending card, click **Reconnect**.

- Step 4 Specify the refreshing range, and click **Refresh** to view the current program version of the hardware.
 - Refresh All: View the program versions of all sending cards and receiving cards.
 - Refresh Specified: View the program versions of the specified sending cards and receiving cards.

If the module has an MCU, select Refresh Module MCU to view the MCU version.

ogram loadingthe current communication port has device accessed —		×
Program loading		
Select the communication port for operation		
Communication port	Reconnect	
for the current operati		
Program updating		
Program Pat G:VDATA_A10s_V4.5.2.7	Browse	
Advanced	Update	
Educative succession lines		
Extend the operation item		
Read-back of recei		
Hardware Program Version Information		
◯ Refres ම Refres Sendi 1 🗘 Outp 1 🐳 Recei 1 🐳 🗌 Refres	Refresh	
	Ittellesit	
- Hardware program version information		
- Sending Card		
H- V1.2.3.0 Total1, Remarks: 2018.07.03 V900 V1.2.3.0 STD		
-Receiving Card		
- Receiving Card MCU		
H-V4.5.9.0 Total1,Remarks:2019.05.20 MRV316_MCU_V1.2.3.0		
- Receiving Card FPGA		
H- V4.5.9.0 Total1, Remarks: 2018.10.15 MRV316_FPGA_V4.5.8.0		
Information Console		
2019/12/514:57:47Sending Card1 Read sending card program version Succeeded		
2019/12/5 14:57:47Sending Card1 Output port1 Receiving Card1 Read receiving card FPGA version Succeeded		
2019/12/5 14:57:47Sending Card1 Output port1 Receiving Card1 Read receiving card MCU version Succeeded	Clear	
	Ciear	

- Step 5 Click Browse, select a program package, and click OK.
- Step 6 Click Advanced, select the items to be updated, and click OK.

Figure 9-3 Advanced settings

	MCU FPGA	A10s_MCU_V1.2.2.1_nda.dat	4.5.2.7
	FPGA		
		A10s_FPGA_V4.5.2.5.dat	4.5.2.7
	Font	FontLib.dat	4.5.2.7
\checkmark	Table	GammaTable.dat	4.5.2.7

Step 7 Click Update.

Step 8 Choose to update the programs of all receiving cards or the specified receiving card, and then click OK.

Figure 9-4 Selecting send mode

💀 Select a send mode	×
All receiving cards	
O Specified receiving care	ard
Sending card	1
Ethernet port:	1
Receiving card:	1
ОК	Cancel
Specified broadcast data ope	rating tips:
Broadcast corrsponding value	es: sending card(256); Et ? .

Step 9 After the programs are updated successfully, click OK.

- Step 10 If the receiving card supports program readback, perform the following operations to save the receiving card program to your local drive; otherwise, skip this step.
 - 1. Click Read-back of receiving card program.
 - 2. Specify the receiving card, and click **OK**.

💀 Select receive card	- 🗆	×
Sending card	1	
Ethernet port:	1	
Receiving card:	1	
ок	Cancel	Ç

- 3. Select the file save path, and click OK.
- 4. After the settings are done, click **OK**.

9.2 LED Error Detection

Applications

Detect the damaged LED lights and locate them on the screen.

Applicable Products

- Use monitoring card for Led error detection: Applicable to the MRV320 and MRV560 receiving cards
- Use smart module for Led error detection: Applicable to the A4, A4s, A5, A5s, A5s Plus, A7, A7s, A7s Plus, A8, A8s, A9s, A10s Plus, XC200, XC100 and B4s receiving cards. The smart module Led error detection function is a customized function of the receiving cards.

Prerequisites

- The module driver chip must be support LED error detection.
- If you want to use the Led error detection function of the monitoring card, the module driver chip must support 1/16 scan or below, and the MON300 monitoring card is required between the connection of module and the MRV320 or MRV560.

Related Information

None



Operating Procedure

Step 1 On the menu bar, choose **Tools** > Led Error Detection.

ed Error Detection							×	
Communication Port Sel Communication Port	192.168.0.10:5200	~						
Screen1								-
Screen Topological Dia	gram							
					2001	n 1.0 Unknov Error Norma No Mor	i.	
Led Error Detection Par	ameters							
Detection Type	Open Circuit an	d Short Circuit Detec						
Threshold Voltage	1	O 2	O 3	O 4				
Current Gain	🗹 Enable	Change Settin	a					
Bi-Color LED Error	🔲 Enable							
		Save Co	onfi	Led error d	Pause	Stop		
					CY.			
Information								

Figure 9-5 Led error detection

Step 2 Choose a communication port.

Step 3 Set Led error detection parameters.

- Detection Type: The detection types supported by the driver chip
- Threshold Voltage: The threshold voltage of the driver chip, which can be set based on the information provided by the screen manufacturer
- Current Gain: Select whether to enable the current gain function. Click **Change Setting** to adjust the current gain.
- Bi-Color LED Error: Select whether to detect only the red and green LED lights.
- Step 4 Click **Conduct led error detection for full screen**, or select a cabinet on the screen topological diagram and click **Led error detection selection**.
- Step 5 After the detection is done, click **OK**.

Error Detection							×		
ommunication Port Sele	ction	5						-	
ommunication Port	192.168.0.10:5200	~							
creen1									
Screen Topological Diag	ram								
					Zoom				
					^				
24582									
					v .	.0			
						Unknow	m		
						Error			
						Normal			
						No Moni	ito		
ed Error Detection Para	imeters								
Detection Type	Open Circuit an	d Short Circuit Detection							
Threshold Voltage	O 1	O 2	O 3	• 4					
Current Gain	🛃 Enable	Change Setting							
Bi-Color LED Error	🔲 Enable								
		Save Confi	Conduct led.	Led error d	'ause	Stop			
		C					_		
							×		
)19-11-08 05:16:03Scr	een1:Led error deter	tion is being initialized, i	please wait			^			
	Margaret Margaret	error detection! The nur	the second s	ards which have receive	d led error dete	at			
	and the second se	and the second se		Contraction of the second s		~	EA		
						× .	Loopen and		

The number displayed on the topological diagram indicates the number of the faulty LED lights. Hover the mouse over the topological diagram to view the detailed Led error detection information.

Step 6 Double click a cabinet in the topological diagram to access the interface shown in Figure 9-7.



Figure 9-7 Result of the Led error detection for all the modules

Step 7 Select a red module, and select **Red A**, **Green**, **Blue** or **Red B** (virtual red) on the right to view the faulty LED lights which are shown in black.

9.3 Reset Run Time

Applications

Reset the receiving card run time displayed on each cabinet LCD.



Applicable Products

All receiving cards

Prerequisites

None

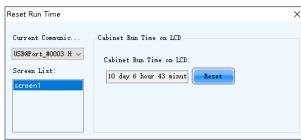
Related Information

The run time is stored in the receiving card and displayed on the cabinet LCD.

Operating Procedure

Step 1 On the menu bar, choose Tools > More > Reset Run Time.

Figure 9-8 Resetting run time



Step 2 Choose a communication port and a screen.

Step 3 Click Reset.

9.4 Bit Error Detection

Applications

Test whether the communication of the receiving card Ethernet port is normal.

Applicable Products

All receiving cards

Prerequisites

None

Related Information

None

Operating Procedure

- Step 1 On the menu bar, choose **Tools** > **More** > **Bit Error Detection.**
- Step 2 Click Manually as shown in Figure 9-9.



Figure 9-9 Bit error detection Bit Error Detection × _ Device 🗌 Auto Refresh 1 🜩 Min Manually Clear - All ⊨-USB@Port_#0003.Hub_# ___Sending card1 Bit Error Information Ethernet Receiving Port Card Sending card Error Details Clear Errors Status Locate USB@Port_#0003.Hub_#0001-Sending Port1 Receiving Errors:0 2019年12月4日 17:00:02 Locate Clear O Detection not Data reading 🔵 Normal Error detected

Step 3 If the communication is abnormal, perform any of the following operations as required. If the communication is normal, skip this step.

View error details

Click the link in the Error Details column and view the detailed error information in the displayed dialog box.

Locate display area

Click Locate to view the display area on the screen.

Clear errors

Click Clear Errors to reset the error quantity to 0.

Step 4 (Optional) Select Auto Refresh and set the refreshing period.

9.5 View Hardware Information

Applications

Set the current time of the hardware, and view the sending card SNs and hardware program version information.

Applicable Products

All receiving cards and sending cards

Prerequisites

None

Related Information

Currently only hour, minute and second can be set, but the date cannot be set.

Operating Procedure

Step 1 On the menu bar, choose **Settings** > **Hardware Information**.



Figure 9-10 Hardware information

							_	
Harc	ware Information			_		×		
Time								
CL	rrent Time of Hardwar	e 12/04/2019 17:02:42	Read	Set				
Sele	t the Communication	Port						
С	urrent Operation C	USB@Port_#0003.Hub_#0001			\sim			
SNN	lumber of Sending Ca	rd					1	
	Serial Number	SN Number					1	
•	1	1205-1000-8002-0000 (18	3-5-28-0-640)				1	
					Reread		1	
							-	
Hard	ware Program Versior	Information						
		Qanati de Al Outro	A A Pocoi A	Refres		fresh		
•	Refres 🔘 Refres	Sendi 1 🖨 Outp	1 🖨 Recei 1	E Refres	Re	iresn		
Infor	mation Console							
						lear		

Step 2 Choose a communication port.

After a communication port is selected, the current hardware time will be refreshed automatically. You can also click **Read** to manually update the hardware time.

- Step 3 If you want to set the current time of the sending card to that of the computer, click Set; otherwise, skip this step.
- Step 4 Click **Reread** to view the sending card SNs.
- Step 5 Specify the refreshing range, and click **Refresh** to view the current program version of the hardware.
 - Refresh All: View the program versions of all sending cards and receiving cards.
 - Refresh Specified: View the program versions of the specified sending cards and receiving cards.

If the module has an MCU, select Refresh Module MCU to view the MCU version.

Figure 9-11 Viewing program version

ime			- 0	×	
Current Time of Hardware	12/04/2019 17:02:42	Read	et		
elect the Communication Por	t				
Current Operation C	SB@Port_#0003.Hub_#0001		~		
N Number of Sending Card -					
Serial Number	SN Number				
• 1	1205-1000-8002-0000 (18-5-28	8-0-640)			
			Reread		
lardware Program Version Inf	formation				
2					
-	Sendi 1 🔹 Outp 1	Recei 1	Refres	fresh	
-	Sendi 1 🔹 Outp 1	Recei 1 🔹	🗌 Refres 🛛 🦳	fresh	
Refres Refres	Sendi 1 🔹 Outp 1	Recei 1 🗘	🗌 Refres 🛛 🦳	fresh	
 Refres Refres Hardware program version 	Sendi 1 🔹 Outp 1	Recei 1	C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card MCU 4.71.2.4.0 Total1	Sendi 1 Dutp 1 information Remarks:2019.07.04 MCTRL4K V1.2.4.0		C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card MCU Sending Card MCU Sending Card FGA	Sendi 1 Outp 1	.0 STD	C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA	Sendi 1 Dutp 1 information Remarks:2019.07.04 MCTRL4K V1.2.4.0	.0 STD	C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card MCU Over 1.2.4.0 Total1, Sending Card PGA	Sendi 1 Outp 1	.0 STD	C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA G-V1.2.4.0 Total1, G-V1.2.4.0 Total1,	Sendi 1 Outp 1	.0 STD	C Refres	fresh	
Refres O Refres Hardware program version Sending Card Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA Sending Card FPGA Sending Card Sending Card Sending Card	Sendi 1 Dutp 1 Information Remarks:2019.07.04 MCTRL4K V1.2.4.0 Remarks:2019.07.04 MCTRL4K V1.2.4.0	.0 STD .0 STD		fresh	
Refres O Refres Hardware program version Sending Card Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA Sending Card FPGA Sending Card PGA Sending Card Sending C	Sendi 1 Dutp 1 information Remarks:2019.07.04 MCTRL4K V1.2.4.0 Remarks:2019.07.04 MCTRL4K V1.2.4.0 ard1 Read sending card program version ard1 Output port1 Receiving Card read	.0 STD .0 STD in Succeeded d receiving card FPGA version Su	cceeded	fresh	
Refres O Refres Hardware program version Sending Card Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA Sending Card FPGA Sending Card PGA Sending Card Sending C	Sendi 1 Dutp 1 Information Remarks:2019.07.04 MCTRL4K V1.2.4.0 Remarks:2019.07.04 MCTRL4K V1.2.4.0	.0 STD .0 STD in Succeeded d receiving card FPGA version Su	cceeded	Ŷ	
Refres O Refres Hardware program version Sending Card Sending Card Sending Card MCU Sending Card MCU Sending Card FPGA Sending Card FPGA Sending Card PGA Sending Card Sending C	Sendi 1 Dutp 1 information Remarks:2019.07.04 MCTRL4K V1.2.4.0 Remarks:2019.07.04 MCTRL4K V1.2.4.0 ard1 Read sending card program version ard1 Output port1 Receiving Card read	.0 STD .0 STD in Succeeded d receiving card FPGA version Su	cceeded	fresh	

9.6 Fault Diagnosis

Applications

Run diagnosis to find the fault causes when the screen has faults.

Applicable Products

All receiving cards and sending cards

Prerequisites

The screen is bound to VNNOX Care.

Related Information

None

Operating Procedure



Step 1 Click Cloud Monitoring or choose Settings > Cloud Monitoring from the menu bar.

Step 2 Click Fault Diagnosis.

Figure 9-12 Cloud monitoring

X Care	×
Q	B
Fault Diagnosis	Local Backup Files
•	
Register in VNNOX Care	

Figure 9-13 Communication port

Step 3

Screen Configuration		×	
- Select Communication	Port		
Current Operatio	USB@Port_#0009.Hub_#0001 ~		
	Next	Close	

Step 4 Select a fault symptom from the drop-down options.

Figure 9-14 Fault diagnosis

Fault	t Diagnosis	\times
	NovaLCT is currently online. Please select a fault symptom according to the screen status. You can also log in to VNNOX Care to view the diagnosis results.	
	Select a fault symptom 🗸 🗸 🗸 🗸 🗸 🗸	
	For other fault symptoms, Click here for help.	
	Run Diagnosis Close	

For other fault symptoms, click **Click here for help** to enter the official VNNOX Care website to check related information.

Step 5 Click Run Diagnosis.

Step 6 After the diagnosis process is done, click All or Suggested Check Items to see the corresponding diagnosis results.

Figure 9-15 Diagnosis results

Diagnosis complete Progress: 100% Please follow the system instructions to troubleshoot the faults.
Suggested Check Items
tem1] : The working statuses of all the receiving cards.
tem2] : The sending card works normally.
tem3] : The current brightness is 60.8%
tem4] : Whether the screen is turned on.
tem5] : The current time is(GMT+08:00)2022-06-14 14:16:06
tem6] : The internal source is currently being used.
tem7] : Terminal playback status.

10 Plug-in

10.1 Test Tool

Applications

Use the test patterns to check whether the screen can display the image normally and locate the problems.

Applicable Products

All receiving cards and sending cards

Prerequisites

When the display window is large, it is recommended you use an extended display to display the test pattern for easier operation of the software.

Related Information

None

Operating Procedure



- Step 1 Click Test Tool or choose Plug-in > Test Tool from the menu bar.
- Step 2 Click the **Window** tab to set the test pattern size according to the screen size, as well as set the test pattern position and set to show or hide the test pattern as shown in Table 10-1.

When the test pattern needs to be displayed on the extended display, adjust the **X** and **Y** values to ove the test pattern to the extended display.

Figure 10-1 Setting window parameters

U		U	•						
述 Test	Tool of LED	Screen-Novasta	r					- 🗆	×
Window	Pure Color	Gradual Change	Grid	Orientatio	n Help				
x	<		>	50	Width	<		> 805	•
ч	<		>	µ 1	Height	<		> 508	* *
							Show	Hide	
	\sim								

Step 3 Select the Pure Color, Gradual Change, Grid or Orientation tab to set the test pattern style.

Table 10-1 Setting test pattern

Tab Name	Function Description
	Set a pure color test pattern.
	• Select a color.
Pure Color	 Set the grayscale changing method.
	The grayscale changing options include Manual and Automatic . When Automatic is selected, you can set the changing speed, as well as set to start or pause the changing.
	Set a gradient test pattern.
	• Select a color.
Gradual Change	Select a grayscale level.
	 Set the test pattern stretching times.
	 Set the gradient moving style.



Tab Name	Function Description						
	 Set the gradient sequencing and direction. 						
	You can start or stop the moving of the gradient.						
	Set a test pattern that has lines.						
	• Select a color.						
	Set the line style.						
	Set the grayscale level.						
Grid	 Set the line moving speed. 						
	Select Grid Overlaying and select another pattern to display the overlaying grid effect. Click Advanced Setting to set the background color, line width and spacing, and the test patterns that can be used in blending measurement.						
	Click Ageing and the screen displays the pure red, green, blue and white in sequence, which is mainly used by the screen manufacturer.						
	Set the test patterns displayed in the actual positions of the receiving cards and modules. The receiving card serial numbers, receiving card lines and module lines are displayed, which can be used to locate the specific receiving cards or modules.						
	 Set the module width and height. 						
	 Set the module columns and rows in the receiving card. 						
	• Set the colors for the receiving card serial numbers, module lines and receiving card lines.						
Orientation	Set the background color or background image.						
	• Set the receiving card numbering direction. The options include From Left to Right and From Right to Left.						
	If the test pattern is not displayed, click the Orientation button to display it.						
	Click Advanced Setting to set the font size and font type for the receiving card serial number, starting row number, staring column number, as well as the widths of the module and rececving card lines.						

Figure 10-2 Setting orientation parameters

) Screen- No vastar				– 🗆 X
Gradual Change Grid	Orientation	Help		
Module			Loading Module of R	eceiving Card
Width 64 🛟	Height	32 🛟	Number of 2	Number of 2
Color Font		Module Line	R	eceiving Card
Background	0	Backgrou		From Left to Right From Right to Left
	Width 64 💠 Color Font	Gradual Change Grid Orientation Module Width 64 Height Color Font Background	Gradual Change Grid Orientation Help Module Width 64 + Height 32 + Color Font Module Line	Gradual Change Grid Orientation Help Module Width 64 Height 32 Number of 2 Color Font Module Line Background

Notes

Click the Help tab to view the descriptions of the shortcut keys used in Test Tool.

10.2 Calculator

Applications

Open the Windows calculator for users to do the necessary calculations.

Applicable Products

N/A

Prerequisites

None



Related Information

None

Operating Procedure

On the menu bar, choose **Plug-in** > **Calculator** to open the Windows calculator.

10.3 External Program

Applications

Add the shortcut icons for the commonly-used programs to NovaLCT user interface.

Applicable Products

N/A

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 On the menu bar, choose **Plug-in** > **External Program**.

Figure 10-3 External program

External Program				x
Common				
		ĸ	Cancel	

Step 2 Click **C**.

Figure 10-4 Adding external programs

Add External Pr	ogram		x
Program P			
Command			
	ж	Cancel	

Step 3 Select the program path and enter the command line parameter as required, and then click **OK**.

If the external program is successfully added, the shortcut icon of the program will be displayed in Figure 10-3. www.novastar.tech 135

Notes

Select an external program icon and click

to remove the program.

Step 4 Click OK.

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11 Software Settings

11.1 Configure the Save Function

Applications

Configure the Save function that is in the Screen Configuration dialog box.

Applicable Products

All receiving cards and sending cards

Prerequisites

None

Related Information

None

Operating Procedure

- Step 1 On the menu bar, choose Settings > Screen Configuration Backup Settings.
- Step 2 Select an option and click **Save**.

Figure 11-1 Save to HW configuration

Save to HW Configuration	×
Supported by V5.4.4 or later	
O Save to hardware only	
O Save to hardware and back up	
• Remind me to back up after saving to hardware	
Save Close	

11.2 Set Main Window Starting Position

Applications

Set the coordinates of the top-left corner of the main window of NovaLCT on the desktop, and make the window display in the specified position when the software is started.

Applicable Products

N/A

Prerequisites

None

Related Information

None



Operating Procedure

Step 1 On the menu bar, choose **Settings > The Main Window Starting Position**.

Figure 11-2 Setting starting position coordinates

Starting Position S	etting	Х
X Coordinates	780	
Y Coordinates	56	
ОК	Cancel	

Step 2 Set the coordinates of the top-left corner of the main window on the desktop, and click OK.

After the settings are done, the main window moves to the specified position. When next time NovaLCT is started, the main window will be displayed in the target position.

11.3 Change UI Language

Applications

Change the UI language for NovaLCT.

Applicable Products

N/A

Prerequisites

None

Related Information

NovaLCT supports Deutsch, English, Spanish, French, Japanese, Korean, Portuguese, Russian, Thai language, Traditional Chinese and Simplified Chinese.

Operating Procedure

On the menu bar, choose Language and select the target language from the sub-menu.

11.4 View Help Documents and Update Program Online

Applications

View the user manuals, update log and software information of the current version of NovaLCT, and perform online update for NovaLCT.

Applicable Products

N/A

Prerequisites

None



Related Information

The user manuals include NovaLCT LED Configuration Tool for Synchronous Control System User Manual and NovaLCT LED Configuration Tool for Multimedia Player User Manual.

When NovaLCT is started, an **Online Update** dialog box will pop up if the software is not the latest version. Click **Update** to update the software. If you want to update the program later, follow the subsequent operating procedure to perform online update.

Operating Procedure

Step 1 On the menu bar, choose Help.

Step 2 Perform the following operations as required.

View User Manuals

Choose User Documents and select the desired user manual.

View Update Log

Choose Update Log to view the update log in the displayed dialog box.

View Software Information

Choose **About** to view the software version and copyright information in the displayed dialog box. If needed, click the link to visit the official website of NovaStar.

Update NovaLCT

Choose Online Update to check whether a software update is available in the displayed dialog box. If there is a software update, click Update.



12 Troubleshooting

12.1 Failed to install NovaLCT of earlier versions

Problem

The installation of NovaLCT fails when the version to be installed is earlier than the current version.

Solution

Uninstall the current version, and then install the earlier one.

12.2 "No Screen" displayed in NovaLCT

Problem

"No Screen" is displayed in NovaLCT as shown in Figure 12-1.

Figure 12-1 No screen



Solution

- If the LED screen has been configured already, click Green Configuration and select the Screen Connection tab, and then click Read from HW to read the configurations from the LED screen.
- If the screen has not been configured yet, configure it first.

12.3 Permission error

Problem

After NovaLCT is installed on the system disk of the computer that runs Windows 8 or later version, some functions in NovaLCT cannot work normally.



Solution

Here, we use Windows 10 as an example to illustrate how to solve this problem.

- Step 1 Right click the desktop shortcut of NovaLCT and select **Open file location**.
- Step 2 Go back to the upper level of current file directory, that is, "\Nova Star\NovaLCT".
- Step 3 Right click the **Bin** folder and select **Properties**.
- Step 4 Select the Security tab.

Figure 12-2 Security

📜 Bin Properties		×			
General Sharing Security	Previous Versions	Customize			
Object name: C:\Users\Admin\AppData\Roaming\Nova Star\Nc Group or user names:					
	る小文组 (DESKTOP-34FJNBB\Admin) 욅 Administrators (DESKTOP-34FJNBB\Administrators)				
To change permissions, clic	ck Edit.	Edit			
Permissions for SYSTEM	Allov	w Deny			
Full control	~	^			
Modify	~				
Read & execute	\checkmark				
List folder contents	~				
Read	~				
Write	\checkmark	~			
For special permissions or advanced settings, Ad <u>v</u> anced click Advanced.					
	OK Cance	l <u>A</u> pplý			

Step 5 Check whether there is current user or Everyone in the Group or user names area.

- Yes: Go to Step 11.
- No: Go to Step 6.

Step 6 Click Edit to open the dialog box shown in Figure 12-3.

Figure 12-3 Changing permissions

Security Object name: C:\Users\Admin\AppData\Roaming\Nova Star\Nc Group or user names: SYSTEM Administrators (DESKTOP-34FJNBB\Admin) Administrators (DESKTOP-34FJNBB\Administrators) Add Remove Permissions for SYSTEM Allow Deny Full control Modify Read & execute List folder contents Read OK Cancel Apply	Permissions for Bin		×
Group or user names: SYSTEM 外文组 (DESKTOP-34FJNBB\Admin) Administrators (DESKTOP-34FJNBB\Administrators) Administrators (DESKTOP-34FJNBB\Administrators) Add Remove Permissions for SYSTEM Allow Deny Full control Modify Read & execute List folder contents Read	Security		
SYSTEM Article Adminited Adminited Adminited Administrators (DESKTOP-34FJNBB\Administrators) Administrators (DESKTOP-34FJNBB\Administrators) Add Remove Add Remove Permissions for SYSTEM Allow Deny Full control Modify Read & execute List folder contents Read Deny	Object name: C:\Users\Admir	n\AppData∖Roaming	g\Nova Star\Nc
SYSTEM Article Adminited Adminited Adminited Administrators (DESKTOP-34FJNBB\Administrators) Administrators (DESKTOP-34FJNBB\Administrators) Add Remove Add Remove Permissions for SYSTEM Allow Deny Full control Modify Read & execute List folder contents Read Deny	Group or user names:		
Administrators (DESKTOP-34FJNBB\Administrators) Add Remove Add Remove Permissions for SYSTEM Allow Deny Full control Image: Control Image: Control Image: Control Modify Image: Control			
Add Remove Permissions for SYSTEM Allow Deny Full control Image: Allow Image: Allow Modify Image: Allow Image: Allow Read & execute Image: Allow Image: Allow List folder contents Image: Allow Image: Allow Read Image: Allow Image: Allow	🚨 外文组 (DESKTOP-34FJNI	BB∖Admin)	
Permissions for SYSTEM Allow Deny Full control Image: Allow Image: Allow Modify Image: Allow Image: Allow Read & execute Image: Allow Image: Allow List folder contents Image: Allow Image: Allow Read Image: Allow Image: Allow	Administrators (DESKTOP-3	4FJNBB\Administra	tors)
Permissions for SYSTEM Allow Deny Full control Image: Allow Image: Allow Modify Image: Allow Image: Allow Read & execute Image: Allow Image: Allow List folder contents Image: Allow Image: Allow Read Image: Allow Image: Allow			
Permissions for SYSTEM Allow Deny Full control Image: Allow Image: Allow Modify Image: Allow Image: Allow Read & execute Image: Allow Image: Allow List folder contents Image: Allow Image: Allow Read Image: Allow Image: Allow			
Permissions for SYSTEM Allow Deny Full control Image: Allow Image: Allow Modify Image: Allow Image: Allow Read & execute Image: Allow Image: Allow List folder contents Image: Allow Image: Allow Read Image: Allow Image: Allow			
Full control Image: Control Modify Image: Control Read & execute Image: Control List folder contents Image: Control Read Image: Control			
Nodify Image: Control in the second		A <u>d</u> d	<u>R</u> emove
Read & execute	Permissions for SYSTEM	-	_
List folder contents		-	
Read	Full control	-	
	Full control Modify	-	
OK Cancel Apply	Full control Modify Read & execute	-	
OK Cancel Apply	Full control Modify Read & execute List folder contents	-	
OK Cancel Apply	Full control Modify Read & execute List folder contents	-	
	Full control Modify Read & execute List folder contents	-	

Step 7 Click Add to open the dialog box shown in Figure 12-4.

Figure 12-4 Selecting users or groups

Select Users or Groups	×
<u>S</u> elect this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
DESKTOP-34FJNBB	Locations
Enter the object names to select (<u>examples</u>):	
	Check Names
Advanced OK	Cancel .::

Step 8 Click Advanced to open the dialog box shown in Figure 12-5, and click Find Now.

Figure 12-5 Advanced settings

		-	
Select Users or Grou	ps		×
Select this object type: Users, Groups, or Built-in security principals Object Types			<u>O</u> bject Types
From this location:			
DESKTOP-34FJNBB			Locations
Common Queries			
N <u>a</u> me: Sta	ts with \sim		<u>C</u> olumns
Description: Star	ts with $$		Find <u>N</u> ow
Disa <u>b</u> led accou	unts		Stop
Non expiring pa	assword		
Days since last log	jon: 🗸 🗸		?
Search res <u>u</u> lts:			OK Cancel
Name	In Folder		^
	si DESKTOP-34FJ		
🛃 Admin 酔 Administrator	DESKTOP-34FJ DESKTOP-34FJ		
Administrator	DESKTOP-34FJ		
ALL APPLICATION ANONYMOUS LO. Authenticated User Authentication auth	l rs		
Backup Operators			
2			Ÿ

- Step 9 Select current user or Everyone in the search result, and click OK.
- Step 10 Click OK.
- Step 11 Select all for the Allow column and click OK.

Figure 12-6 Setting permis	sions	
Permissions for Bin		×
Security		
Object name: C:\Users\Admin\	AppData\Roamin	g\Nova Star\Nc
<u>G</u> roup or user names:		
Se Everyone		
SYSTEM		
▲ 外文组 (DESKTOP-34FJNBI)	3∖Admin)	
Administrators (DESKTOP-34		tors)
		·
	A <u>d</u> d	<u>R</u> emove
Permissions for Everyone	Allow	Deny
Full control	\checkmark	□ ^
Modify	\checkmark	
Read & execute	\checkmark	
List folder contents	$\mathbf{\Sigma}$	
Read	\checkmark	
1		
ОК	Cancel	<u>A</u> pply

Step 12 Click **OK** and close the properties dialog box.

12.4 Failed to connect colorimeter

Problem

The colorimeter connection fails when the colorimeter is used to automatically measure the original color space of the screen.

Solution

Step 1 Check whether the hardware connection of the colorimeter is normal.

When the colorimeter model is CS-100A, follow the subsequent descriptions to make sure the colorimeter auto mode is turned on.

Turning on auto mode: Set switch to ON while pressing the F button. When you see a C letter on the LCD, the auto mode is turned on, which is shown in Figure 12-7.

Figure 12-7 Setting CS-100A colorimeter



- Normal: Go to Step 2.
- Abnormal: Reconnect the colorimeter and make sure the colorimeter can work normally.
- Step 2 Check whether the colorimeter model selected in NovaLCT is correct.
 - Correct: Go to Step 3.
 - Incorrect: Select the correct model.
- Step 3 In NovaLCT, click Connect to reconnect the colorimeter.

13 FAQs

13.1 How do I set the required parameters in no sending card mode?

Question

The receiving card supports no sending card mode. When the hardware connection with no sending card is completed, how to set the required parameters?

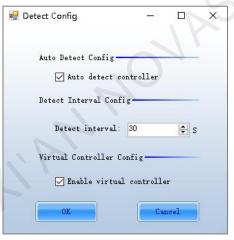
Figure 13-1 No sending card mode



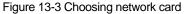
Answer

- Step 1 Make sure the network card allows a data transmission rate of 1000 Mbps.
- Step 2 On the taskbar, right click and choose Detect Config.
- Step 3 Select Enable virtual controller and click OK.





- Step 4 On the taskbar, right click Market and choose Select Network Card.
- Step 5 Choose a network card and click **OK**.





13.2 How do I set the proxy when NovaLCT needs to access WAN network?

Question

When NovaLCT in LAN network needs to access WAN network, how to set the proxy?

<u>Answer</u>

Step 1 On the taskbar, right click i and choose System Setting.

Figure 13-4 Setting pro	оху
System Setting	×
🗌 Enable Froxy	Test Proxy
Proxy Address	
Proxy Port 0	
Setting	Close

- Step 2 Select Enable Proxy.
- Step 3 Enter the proxy address and port.
- Step 4 Click Test Proxy.
- Step 5 After the test succeeds, click Setting.

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I'AN NOVASTAR TECH CO.'

Official website www.novastar.tech

Technical support support@novastar.tech