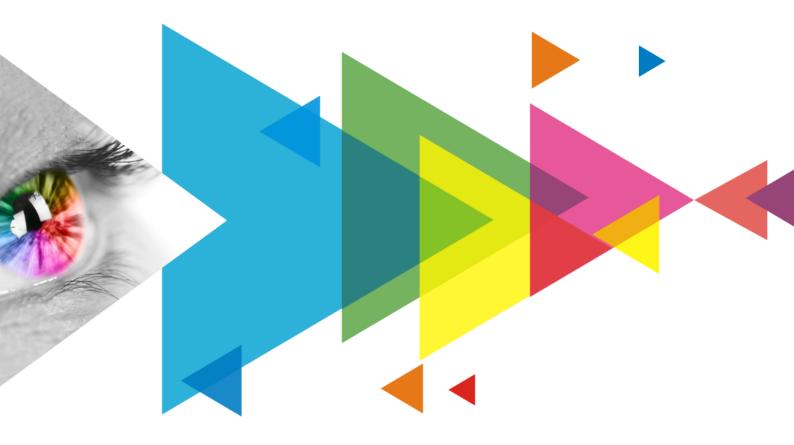


NovaLCT LED Configuration Tool for Multimedia Player



User Manual

Contents

Contents	i
1 Software Introduction	1
2 Software Installation	2
3 Device Connection	3
4 User Login	4
5 Screen Configuration	6
5.1 Load Configuration Files of Common Screens	
5.2 Configure a Common Screen Manually	
5.2.1 Step 1 Light a Screen	
5.2.2 Step 2 Connect Screen	
5.2.3 Step 3 (Optional) Save Configuration Files	21
5.3 Set Redundancy	23
5.4 Set Performance Parameters	25
6 Brightness and Chroma Adjustment	
6.1 Calibration	
6.1.1 Set Online Calibration Parameters	
6.1.2 Get Average Coefficients	34
6.1.3 Manage Calibration Coefficients	
6.1.4 Manage Double Calibration Coefficients	
6.2 Adjust Brightness	
6.3 Correct Brighter Pixels	46
6.4 Set Advanced Color	48
6.5 Adjust Screen Effect	51
6.6 Set Image Booster Engine	
6.7 Batch Check Calibration Effects	56
7 Screen Monitoring	
7.1 Register Screens with VNNOX Care	58
7.1.1 Register Online Screens	
7.1.2 Register Offline Screens	
7.2 View and Configure Monitoring	
8 Screen Management	
8.1 Multi-function Card Management	67
8.2 Receiving Card Relay	
8.3 Configuration Information Management	73
8.4 Screen Control	73
8.5 Module ID Settings	74
9 Screen Maintenance	77
9.1 Firmware Program Update	77
9.2 LED Error Detection	78
9.3 Reset Run Time	80
9.4 Bit Error Detection	81
9.5 Send NCP Files	82
10 Plug-in	85
10.1 Test Tool	85
10.2 Calculator	
10.3 External Program	87
11 Software Settings	
11.1 Configure the Save Function	
11.2 Cloud Server Configuration	
11.3	



NovaLCT LED Configuration Tool for Multimedia Player User Manual

11.4 Set Main Window Starting Position	
11.5 Change UI Language	91
11.6 Obtain Help Information	
11.7 Update Software	92
11.7.1 Online Update	92
11.7.2 Local Update	93
12 Troubleshooting	95
12.1 Failed to install NovaLCT of earlier versions	95
12.2 "No Screen" displayed in NovaLCT	95
12.3 Permission error	95
12.4 Failed to connect colorimeter	
13 FAQs	
13.1 How do I set the required parameters in no sending card mode?	100
13.2 How do I set the proxy when NovaLCT needs to access WAN network?	

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.

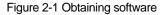
Efficient configuration

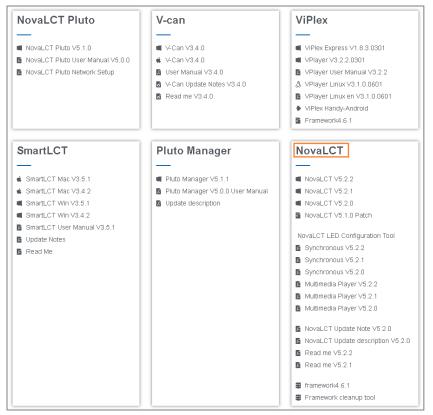
After the PC and control system product are connected, users can perform any operations with the PC. NovaLCT displays the corresponding functions and parameters according to the different hardware models and programs. During configuration, various kinds of configuration files can be used to complete 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.

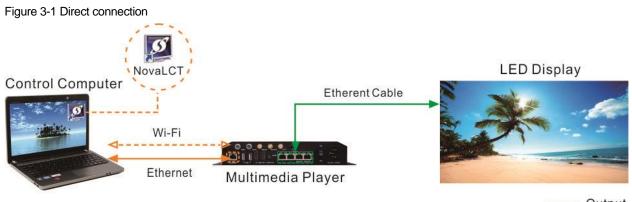
Verifying Installation

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

3 Device Connection

The PC with NovaLCT installed sends the control commands, parameters, and configuration files to the multimedia players via Ethernet cable or Wi-Fi. Figure 3-1 and Figure 3-2 use the TB6 Taurus series multimedia player as an example to show the typical connections.

Direct Connection via Ethernet Cable and Wi-Fi



Output
 Control

Direction connection via Ethernet cable

The control computer is directly connected to the multimedia player via Ethernet cable.

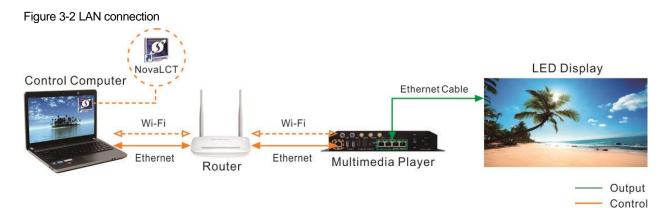
This method requires that DHCP must be enabled on the multimedia player and you must choose **Plug-in** > **DHCP Service** in NovaLCT, select the IP address of the PC and turn on the **DHCP Service** switch.

Direction connection via Wi-Fi

The control computer is directly connected to the multimedia player via Wi-Fi AP.

When the multimedia player has built-in Wi-Fi AP, you can use this method without the need for configuration.

Wired and Wireless LAN Connection



Wired LAN connection

The control computer and multimedia player are connected to the same wired LAN via Ethernet cable.

If this method is used, configuration is not required.

Wireless LAN connection

The control computer and multimedia player are connected to the same wireless LAN via Wi-Fi.

This method is available when the multimedia player supports Wi-Fi Sta. The DHCP of the multimedia player must be enabled. You must log in to the multimedia player with the configuration software (such as ViPlex) and connect the player to the Wi-Fi AP of the router on the network configuration page.



4 User Login

Users must log in to the multimedia player first and then configure the player.

Operating Procedure

Step 1 Open NovaLCT.

If the software is not the latest version, an **Online Update** dialog box will pop up. You can click **Update** to update the software.

Step 2 On the menu bar, choose User > Media Player Login.

Figure 4-1	Main	window	(Not	logged	in)
------------	------	--------	------	--------	-----

System(<u>S</u>) Setti	ngs (<u>C</u>) Too	s(<u>T</u>) Plug-in (<u>P</u>)	User(<u>U</u>) La	anguage(<u>L</u>)	Help(<u>H</u>)
Cloud Monitoring	Brightness	Screen Control	Ionitoring Mu	Iti-function C	Card Test Tool
-		Screen Control	ionitoning Mu	Iu-Iuncuon C	Said Test tool
-Local System Inform	nation				
Control System	0	Other Devic	e O		View Details of Device
Monitor Information					
	N	o screen, cl	ick here f	or conf	figuration
Service Status: Serv	vice version:3.1	1			.:

Step 3 In the Terminal List dialog box, click Refresh.

Figure 4-2 Terminal list

Terminal List		×
Sort by name in descending	○ Sort by name in ascending	
Name		
	Refresh	nnect System

Step 4 Select a multimedia player from the list and click Connect System.

If the terminal and NovaLCT are not on the same network segment but they can be pinged, click **v** next to **Refresh**, select **Specify IP**, enter an IP address and click **Search**.

Figure 4-3 Selecting a terminal

Terminal List		×
Sort by name in descending	○ Sort by name in ascend	ing
Name		
Taurus-40002453		
	Refresh	Connect System

Step 5 Enter the user name and password, and then click **OK**.

For example, the login user name and the default password of Taurus series multimedia players are "admin" and "123456", respectively.

After successful connection, the NovaLCT main window displays the multimedia player quantity and monitoring information, as shown in Figure 4-4.

Figure 4-4 Main window (Logged in)

	System(<u>S</u>)	Settings (<u>C</u>) Tools(<u>T</u>)	Plug-in (<u>P</u>)	User(<u>U</u>) l	_anguage(<u>L</u>)	Help(<u>H</u>)		
	Screen Con	nfiguration	Brightness	Calibration	Screen Contro	Monitoring	[바다 문화] Multi-function Card	Test Tool	
	-Local System	Information							
	Control Sys	stem	1	Other Devic	ce O	V	iew Details of Device		
	- Monitor Inform	nation							
					[!]				
		۲			۲		۲		
l	Service Status	: Service vers	sion:3.1.1						.:

Other Operations

- View Details of Device
 Click View Details of Device to view the communication port, device name, device quantity and SN.
- Reconnect multimedia player

Choose System > Reconnect.

Log out

Choose User > Logout.

5 Screen Configuration

Notes

NovaLCT currently only supports configuring regular screens. Irregular screens are not supported.

5.1 Load Configuration Files of Common Screens

Applications

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

Applicable Products

All receiving cards and multimedia players

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 Log in to the multimedia player. For details, see 4 User Login.



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

Screen Configuration		×
-Select Communication	Port	
Current Operatio	172.18.12.29:5200 🗸	
Configure Screen		
O Cloud Restore	~	
O Local Restore		Browse
	Next	Close

- Step 3 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.

Re	estore Confi	guration File-192.1	168.41.1:5200			_		×
Re	ceiving Card	Screen Connection						
	Send By Top		sicalAddress					
	Screen se							
	Screen1		© Full		=0, Y=0 Size1152W×384H	t Operatin		
					Operate All Pixels			
						Send to S		-
Ba	ickup File:	novastarScreenBac	kupFile.zip	Software Version:	NovaLCT V5.4.4.1982.T1(PingBoss)	Backu	ip Time:	

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

Screen Configuration Select Communication	Port	>
Current Operatio	172.18.12.29:5200 ~	
	nfiguring screen, please wait(1/3)	
Local Restore	C:/Users/Nova001157/Desktop/MCTRL4K2.scfg Brow	vse
	Next	se

5.2 Configure a Common Screen Manually

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

Note

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



5.2.1 Step 1 Light a Screen

5.2.1.1 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 Log in to the multimedia player. For details, see 4 User Login.



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	
Current Operatio	172.18.12.29:5200 🗸	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse	
	Next Close	

- Step 3 Select Configure Screen and click Next.
- Step 4 On the Screen Configuration page, click the Receiving Card tab.

any cara	ving Card Screen	Connection				
lodule Informati						
Chip:	Common C	Size:	32W×16H	Scanning Typ	be 1/8 scan	
Direction:	Horizontal	Data Groups	2	Adjust RG		Check M
abinet Informati	ion					Set Rotatio
Regular				🔿 Irregular		
Width (Pixel)	32	€ <=65		Width: ??	Height ??	
Height (Pixel)	16	€ <=128		Loading error Play	ase try to adjust pe	
Module Case						
Module Cast	From Right to	Left 🗸		Construct Ca	View Cabinet	
erformance Set	tinas					
Data Group E	More Setti	ngs			18bit+	
Refresh Rate	480	→ Hz:	Refresh Rate Ti	4 ~		
Grayscale Leve	Normal 4096	\sim	Grayscale Mode	Refreshing Rate Fir $ \smallsetminus $		
Shift Clock Fre.	12.5	✓ MHz	Duty Cycle	50 ~	(25~75) %	
Phase Position	6	\sim	Low Grayscale C	0		
Row Blanking	. 15	≑ (=1.20us)	Ghost Control En	13 🖨	(1~14)	
Line Changing	3	(0~12)				
Minimum OE w	160 ns					
Brightness Effi.						
Smart Settings			Rece	eiving Car Load from	Save to File Read from	Re Send to Red
Current Receiv		Version:				Restore Fact

- Step 5 Click Load from File and select a configuration file from the local computer.
- Step 6 After successful loading, click OK.
- Step 7 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 5-4 Sending parameters to receiving card

Send Parameters to Receiving Card			×
All Recei Reset the Starting Coordinate Specify Receiving Card	Send	Can	cel

Step 8 After successful sending, click **OK** to close the prompt box. The screen is now lighted.

5.2.1.2 Manual Screen Configuration

5.2.1.2.1 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. www.novastar.tech

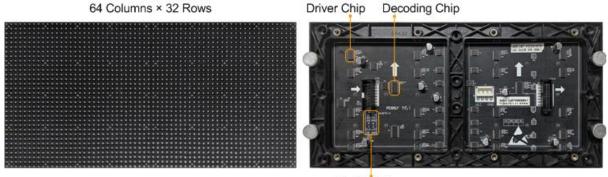
Related Information

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 5-5.

- 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 5-5 Module example



Pin Definition

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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 Click Screen Configuration from the menu bar to open the dialog box shown in Figure 5-6.

Figure 5-6 Screen configuration method

Screen Configuration	5	×
Select Communication	Port	1
Current Operatio	172.18.12.29:5200 ~	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse	
	Next Close)

- Step 3 Select Configure Screen and click Next.
- Step 4 On the Screen Configuration page, click the Receiving Card tab.



nding Card Receivir	ng Card Screen	Connection		
Module Information	1			
Chip: 0	Common C	Size:	32W×16H	Scanning Type 1/8 scan
Direction:	Horizontal	Data Groups	2	Adjust RG Check M
Cabinet Informatior	n			Set Rotation
Regular				O Irregular
Width (Pixel)	32	<=65		Width: ?? Height: ??
Height (Pixel)	16	=128		Loading error. Please try to adjust pe
Module Casc	From Right to	Left 🗸		Construct Ca View Cabinet
	riointigiitto	Lon		View Cabiner
Performance Settin	igs			
Data Group E	More Setti	ngs		18bit+
Refresh Rate	480	→ 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) %
Phase Position	6	~	Low Grayscale C	0
Row Blanking	15	🔹 (=1.20us)	Ghost Control En	13 (1~14)
Line Changing	3	(0~12)		
Minimum OE w	160 ns			
Brightness Effi	68.96%			
Smart Settings			Rec	eiving Car., Load from., Save to File Read from Re., Send to Rec
omarioeungo				
				Restore Factor

Step 5 Click Smart Settings.

Step 6 Select option 1 and click Next.

- Option 1: Enter smart settings.
- 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 5-8 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:	Browse
O Option 3: Load module information from cabin	
Cabinet Databa	Browse
Calacted Madula:	Select Module
Selected Module:	Geleci Module
View Module Next	Close

Step 7 On the Smart Settings Guide 1 page, set the parameters and click Next.

Figure 5-9 Smart Settings Guide 1

Smart Settings G	uide 1			x
-Module Chip	1:			
Module Chip	Common Chip	 ✓ Sel 	ect chip type	
Data Type				
Data Type:	Parallel d	Irive	~	
Module Inform	nation			
Module Type		Regular Module	🔘 Irregular Modu	lle
Quantity of Pix	kels (virtual s	х: <u>32</u>	y: 32	-
Row Decodin	д Туре	LS9739_Common 🗸	Select Ne	W V
Working Mod	e of Receiving Ca	ird		
Hub Mode:	Norn	nal 🔿 20 Gr	○ 24 Gr ○ 2	28 Gr
Ghost Contro	l Signal	● High ○ L	_0W	
			Next	ncel

- 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 8 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 5-10 Smart Settings Guide 2

Smart Settings Guide 2		x
The current display modu	ıle is:	
Full Black	O Display	
	Back	Cancel

Step 9 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 5-11 Smart Settings Guide 3

-	-	
Smart Se	ttings Guide 3	×
Automotion	omatic switchin 🔿 Manual switchin.	
Please	select the module color in each status:	
● 1	Red A	~
O 2	Green	~
<u> </u>	Blue	\sim
○ 4	Red B or black	\sim
	Back Next	Cancel

- If they are the same, click **Next** to go to Step 10.
- If they are different, select a color corresponding to the module display color from the drop-down list to make them the same.
- Step 10 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 5-12 Smart Settings Guide 4	Figure	5-12	Smart	Settings	Guide 4
------------------------------------	--------	------	-------	----------	---------

Smart Settings Guide 4	
Lighted rows (or columns) on the module	
Row Column	
Number of lighte 16	
Back Next Cancel	

Step 11 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 5-13 Smart Settings Guide 5

Step 12 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.

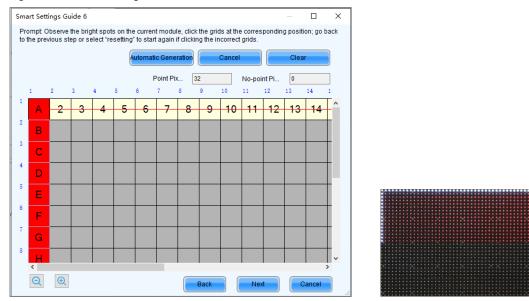
Generally, you only need to draw pixel position for the first row of pixels. If the flashing pixels are on the other row or column, click the corresponding cells in the grid.

- 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.

- 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 5-14. 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 5-14 Smart Settings Guide 6



Step 13 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 14 Click Next and click OK.
- Step 15 (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 5-15 Saving module information

Save Module Information	n	×
Prompt: You can save modul time. Module Name:	e information to file or cabinet database for direct loading next	
Option 1: Save mod File Path:	ule information to file	
Option 2: Save mod Cabinet Datab	ule information to cabi Change Cabinet D View	
	View Module Save Complete	



Note

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

- In the Module Information area, click local 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.

5.2.1.2.2 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 5.2.1.2.1 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 5-16 Cabinet information

Cabinet mormation								Set Rotation
O Regular) Irregular				
Width (Pixel)	64	* *	<=128	Width:	64	Height:	64	
Height (Pixel)	64	A	<=256					
Module Casc	From Rig	ht to Left	*	Construc	t Ca	View Cabi	inet	

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 5-17.
 - 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.

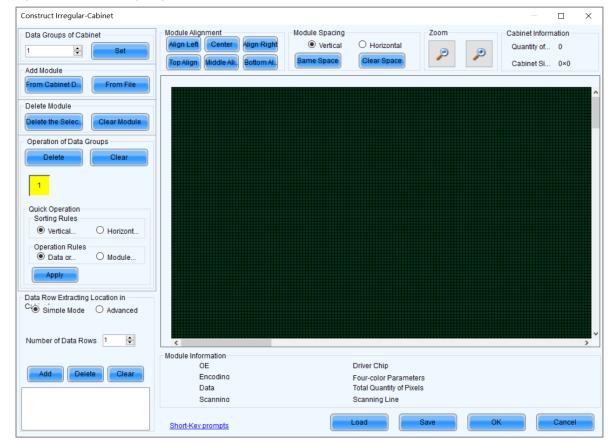


Figure 5-17 Constructing irregular cabinet

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 multimedia player. 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 5-18 Sending parameters to receiving card

Send Parameters	to Receiving Card			×
 All Recei Specify Receivi 	☐ 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).

5.2.2 Step 2 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

All multimedia players

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 multimedia player load the different areas of the same screen, set the screen quantity to **1**. If the multiple output ports of the multimedia player 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 5-19.

creen Configuration-172.18.12.14:52	00							
eceiving Card Screen Connection								
						Quantity o	1 ~	Configur
Screen1								
Screen Type:	Sta	indard Screen	O Irregular Scre	en 🔾 Com	plex Screen			
Sending Card Number	- Basic Inf	ormation						
1	Coordin	ate: X: 0	Y: 0 Virtu	al Mo 🔲 E				
Ethernet Port No.	Column	s 10 R	ows 5	ResetAll	Hided Rei	i ∨ 🕁 🗲	5	
1 2 3 4								1 -
Receiving Card Size		1 Sending Card:	2 Sending Card:	3 Sending Card:	4 Sending Card:	5 Sending Card:	6 Sending Card:	7 ^ Sendi
Width: 128 + Apply to	Entir	Port:	Port	Port	Port	Port:	Port:	F
Height: 128 🖨 Apply to		Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card.	С
Set Blank Apply to the c	urrent.	Width:0 Sending Card:	Wi Sendi					
		Port:	Port:	Port	Port:	Port:	Port:	F
Quick Connection	2	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Receiving Card:	Rec C
리미되		Width:0 Sending Card:	. Wi Sendi					
د لاصد لالمد اصد	3	Port: Receiving	Port Receiving	Port: Receiving	Port. Receiving	Port: Receiving	Port: Receiving	F Rec
- 5 11 군 1		Card:	Card:	Card:	Card:	Card:	Card:	С
لا لسعد العقد المسعد		Width:0 Sending Card:	Wi Sendi					
	4	Port: Receiving	Port. Receiving	Port: Receiving	Port: Receiving	Port: Receiving	Port: Receiving	F
	4	Card:	Card:	Card:	Card:	Card:	Card:	С
	<	Width:0	Width:0	Width:0	Width:0	Width:0	Width:0	Wi •
	Zoom: <		>	1 Note: (Click or dr	ag the left	t mouse but	ton t
Detect Communic Read the Numbe	er Test Pattern	Enat	ole Mapping	Add	d from File	we to File Rea	ad from HW	end to HW
				G	port Screen M.	Save System Co	Save	Close

.....

- Step 4 Choose an output port.
- Step 5 Set the receiving card size (loading capacity) and connection. For example, Figure 5-20 illustrates setting of the 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.

Ethernet Port No.	Column	s 3 Ro	ows 2	ResetAll Hid	ed Red 🗸 📩	€ 5	
1 2 3 4		1	2	3	in the second		
Receiving Card Size Width: 64 Height: 32 Apply to Entir	1	Sending Card:1 Port:1 Receiving Card:2 Width:64	Sending Card:1 Port:1 Receiving Card:3 Widh:64	Sending Card: Port: Receiving Card: Width:0			
Quick Connection	▶ 2	Sending Card:1 Polt:1 RecSring Card:1 Width:64	Sending Card:1 Polt:1 RedUying Card:4 Width:64	Sending Card: Port: Receiving Card: Width:0			
일미되며							

Figure 5-20 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.
- Electric 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 5-21. 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.

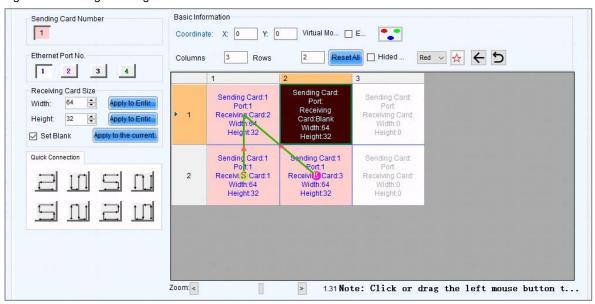
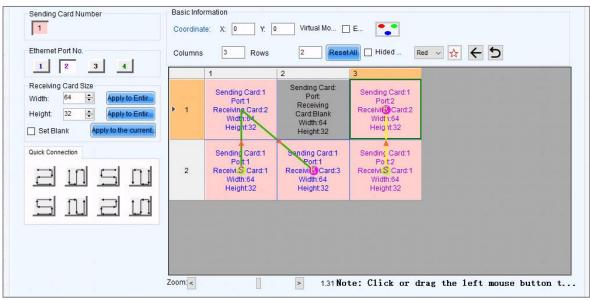


Figure 5-21 Setting receiving card blank

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

For example in Figure 5-22, 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 5-22 Configuration completed



Note

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 5-22 is shown as the diagram in Figure 5-23.

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.

Figure 5-23 Configuration of complex screen

+				200	300		Sendi Card	Port	Card		Startir Y	Width	Heigh
-	1-1-2 Width: 64		1-2-2 Wid				1	1	1	0	32	64	32
_	Height: 32		Height: 32				1	1	2	0	0	64	32
2	1-1-1 Wide Ca	1-1-3 Wide: 64	1-2-1 Wid <mark>S</mark> : 64				1	1	3	64	32	64	32
_	Wid S: 64 Height: 32	Height: 32	Height: 32				1	2	1	128	32	64	32
-							1	2	2	128	0	64	32
-													
11													
-													
-													
-													

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 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 5-24 Successful saving

	x
Saved successfully. Do you want to back up the system configuration file?	
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 for you to obtain the receiving card connection information conveniently.
- 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.

5.2.3 Step 3 (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 multimedia players

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 View and Configure 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 5-25.

Figure 5-25 Saving configuration files (online screen)

💀 Save System Files to Cloud 🛛 🕹
VNNOX Care Use
Password
Screen Name Taurus-40002453
System Config
System Config 1. Sending card backup file 2. Receiving card backup file
3. Screen connection file
4 & Receiving card/NovaLCT
Save
The screen is already registered

- 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 Do the corresponding operation below based on the multimedia player firmware version.
 - Firmware version V3.3.0 or later: After the configuration file is saved, close the prompt box. No further action is required.
 - Firmware version earlier than V3.3.0: Go to Step 5.
- Step 5 Do any of the following operations to upgrade the firmware version and save the configuration file to cloud and local PC. (The device will automatically restart during upgrade.)

Figure 5-26 Upgrade prompt

_							
ſ	💀 Upgrad	le Promp	ət		-		×
	1	Please	urrent device v e upgrade the omplete data ir	device befo	ore che	·	
			Online Vpgrade	Local Upg	rade		

- Online upgrade
 - a. Click Online Upgrade.
 - b. In the pop-up dialog box, click Upgrade.
 - c. After successful upgrade, close the dialog box.
- Local upgrade
 - a. Click Local Upgrade.
 - b. Select a firmware package from local PC and click **Open**.
 - c. After verification, click Upgrade in the pop-up dialog box.
 - d. After successful upgrade, close the dialog 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 5-27.



eiving Card Screen Con	ection					
lodule Information						
Save As						×
$\leftarrow \rightarrow \checkmark \uparrow$	 This 	PC > Documents	ٽ ~	Search Documer	nts	Q
Organize 🔻 Ne	v folder				•== •	?
👆 Downloads	* ^	Name		Date modified	Туре	^
🔮 Documents	*	Adobe		9/29/2018 5:05 PM	File folder	
Pictures	*	Custom Office Templates		12/11/2019 7:18 PM	File folder	
0624 F8		Nova Star		2/15/2019 5:49 PM	File folder	
en-US		NovaCLB		5/14/2019 8:29 PM	File folder	
System32		NovaLCT 2012		7/2/2021 2:01 PM	File folder	
		_ Pixelhue		5/7/2019 3:22 PM	File folder	
		QQPCMgr		1/16/2019 1:44 PM	File folder	
lesson on e Drive e Statement		SDL		8/19/2019 10:55 AM	File folder	
This PC	÷.	Snaglt		3/1/2020 12:08 PM	File folder	
A Nietorale	~ <	Studio 2019		12/2/2019 9:33 AM	File folder	>
File name:						~
Save as type:	System	configuration file(*.scfg)				~

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

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

Figure 5-27 Saving configuration files (offline screen)

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

Applicable to the T60 and TB60 multimedia players

Prerequisites

Redundancy related hardware connection is completed.

Related Information

None.

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.

Step 2 Click Screen Configuration from the menu bar to open the dialog box shown in Figure 5-282.

Figure 5-28 Screen configuration method

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

- Step 3 Select Configure Screen and click Next.
- Step 4 On the Sending Card tab, perform any of the following operations as required.

Figure 5-29 Screen redundancy

Redundancy Set the Current Devi Set	as Primary	Set as Backup	Set
Primar	y	Backup)
Serial Number of Primary Sending Card	Serial Number of Primary Port	Serial Number of Backup Sending Card	Serial Number of Backup Port
Refresh Send		Add	Edit Delete

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.

Redundancy		
Set the Current Devi	Set as Primary	Set as Backup

- Set multiple devices

Click **Set** 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		×
 Set as Primary 	◯ Set as Backup	
Sending Card:	📔 Primary 🔋 Backup 📰 Not set	
📔 🗹 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.

Redundancy Settings		×
Serial Number of Primar Serial Number of Primar	1 •	Serial Number of Backu 1
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 5 Click **Send** to send the configuration information to the hardware, or click **Save** to save the information to the hardware.
- Step 6 After successful saving, choose whether to save the 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 错误!未找到引用源。错误!未找到引用源。.

This step is related with the configuration of the save function. See 错误!未找到引用源。错误!未找到引用源。.

Figure 5-30 Successful saving	
	×
3 Saved successfully. Do you want to back up the system configuration	file?
OK Cancel	

5.4 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 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click Screen Configuration from the menu bar to open the dialog box shown in Figure 5-31.

Figure 5-31 Screen configuration method

Screen Configuration		×
-Select Communication	Port	
Current Operatio	172.18.12.29:5200	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse	
	Next Close	

- Step 3 Select Configure Screen and click Next.
- Step 4 Click the Receiving Card tab and click Read from Receiving Card to obtain the latest configuration information.
- Step 5 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 6 In the Performance Settings area, set the performance parameters.

Performance Setti	ngs						
Data Group E.	More Settin	nas			🗌 18bit	+	
Refresh Rate	480	\sim	Hz	Refresh Rate Ti	4	\sim	
Grayscale Level	Normal 4096	\sim		Grayscale Mode	Refreshing Rate Fir	\sim	
Shift Clock Fre	12.5	\sim	MHz	Duty Cycle	50	\sim	(25~75) %
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%						

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 7 After the settings are done, click Send to Receiving Card to send the performance parameters to the hardware.
- Step 8 After the display effect meets the expectation, click **Save** to save the performance parameters to the hardware.
- Step 9 After successful saving, choose whether to save the 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 5-32 Successful saving

	x
Saved successfully. Do you want to back up the system configuration file?	
OK Cancel	

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.

D	ata se	et exchange(intuition mode)	×
		A	1
	1	5	
	▶ 2	6	
	3	3	
	4	4	
	5	1	
	6	2	
	7	7	
	8	8	
	ndicati	ion: Fill in the lists of data set exchange according to the figures displayed in large screen	
		Apply Close	

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 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.

Data set	exchange	(group mo	de)					×
Serial					А			
1					5			
▶ 2					6			
3								
4								
5								
6								
7								
8								
Indicatio	n: Observe	the positior	n of the wh	nite display a	rea in th	e large screen, t	hen click	the correspon
				Undo		No flashing		Reset data
		6						
🗹 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.

Symmetrical/Data Group Extension	
Output Mode Symmetrical Outputs Triple Strip Outputs Quadruple Strip Outputs	
Data Group Extension 20 Data Groups 24 Data Groups 28 Data Groups 32 Data Groups 64 Data Groups Serial 128 Data Groups	
Ghost Control Signal Signal Switch: Open Close Signal Polarity: High Low	
Hub Mode Normal O 20 Groups O 24 Groups O 28 Groups	
Graphics Output Output by Scanni Output in the dir	
OK)

- 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 Data Line 1 Red Zeen
Data Line2 Green 🗸
Data Line 3 Blue
Data Line 4 Virtual Red 🗸

Additional Function

Set some additional functions of the receiving card.



Additional Function	
Isolated Pixel Afterglow Indicator Light of Rec Shorten the synchroni	Eliminate Close
Brightness becomes	Open Enable
Linear Connection Calibrati 🗹 Enable	Enable
R: 0 🗢	G: 0 🖨
B: 0 🖨	VR: 0 🖨
Delay of ABC signals:	O Enable
Delay of DE signals:	O Enable
No delay:	Enable
Delay time:	0 🔶 0 ns
	Apply
ОК	Cancel

The EMC function can be set to **Disable**, **Weak**, **Medium** or **Strong**. 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.



nysical Arrangement And Setting o	of Module	e Flash					-		×
Number of Fl 3 Nu	imber of Fl	3				Back	R	esetAll	
BUS		1	2	3					
1 2 3 4	1	BUS 1 Serial numt <mark>S-9</mark>	BUS 1 Serial	BUS 1 Serial					
5 6 7 8		Width 64 Height 32	Width 64 Height 32	Width 54 Height 32					
9 10 11 12	2	BUS 1 Serial numb er 5	BUS 1 Serial	BUS 1 Serial					
13 14 15 16	2	Width 64 Heigh 32	Width 64 Height 32	Width 64 Height 32					
<u>17</u> <u>18</u> <u>19</u> <u>20</u>		BUS 1 Serial	BUS 1 Serial	BUS 1 Serial					
21 22 23 24 25 26 27 28	▶ 3	numbe r 6 Width 64 Height 32	Width 64 Height 32	numk[] 8 Width 64 Height 32					
29 30 31 32									
Flash Control Size									
Width 64									
Height 32									
Apply to Curren									
Module Parameters Number of d 2 🖨									
Apply to Curren									
Starting X Co 128 🖨									
Starting Y Co 64 🖨									
Prompt:After setting width direction button to set the						ок		Cancel	

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

N	1onitoring card d	ata set exchange	×		
	🗹 Enable monito	ring 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	~		
	Reset	Send	Cancel		

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.

💀 Cabinet Information Settings				\times
Weight (kg):	0.00	Power (W):	0.00	
Width (cm):	0.00	Height (cm):	0.00	
Pixel Width:	0	Pixel Height:	0	
Voltage (V):	0.00			
		Apply	Close	

6 Brightness and Chroma Adjustment

6.1 Calibration

6.1.1 Set Online Calibration Parameters

Applications

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

Applicable Products

- Full-grayscale calibration: Applicable to the A10s receiving card
- Low-grayscale calibration: Applicable to the A10s receiving card
- Dark or bright line correction: Applicable to the A8s receiving card
- Other functions: Applicable to all receiving cards and multimedia players

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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 Click $C_{alibration}^{n}$ or choose **Tools** > **Calibration** on the menu bar.

Screen Calibration	-		×
Single-Screen Mode Combined-Sc · · Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients			
Communication Port Communication Port Communication Port Course C			
Current Screen			
Screen1 Communication Information 10:38:10 Enable network monitoring successfully			
Settings of Displaying Image Position to Display Image:			
O Extended Display			
Device Response Time			
100 🕂 ms			
Use input source for display			
Enable/Disable Calibration			
O Brightnes Low Gra			
O Chroma			
O Full-Graysc Dark or Save	Export Log	Clear	

Figure 6-1 Screen calibration

- Step 3 Select the Single-Screen Mode tab or Combined-Screen Mode tab.
- Step 4 In single-screen mode, select the screen you want to operate. In combined-screen mode, skip this step.
- Step 5 Select Disable Calibration, Brightness Calibration, Chroma Calibration, or Full-grayscale Calibration. Dark or Bright Line Correction and Low-grayscale Calibration 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 Log in to the multimedia player. For details, see 4 User Login.



- Step 2 Click calibration or choose Tools > Calibration on 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.

Screen Calibration		- 🗆 ×
Single-Screen Mode Combined-Sc	Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients	
Current Operation Communication Port COM99 ~	Display Area Screen:1 Starting coordinateX=0, Y=0 Size512W×256H	
Current Screen		
	Column Nu 0 Display 100	Display
Screen1	Row Number 0 🖨 Display 100 €	Hide
	Average Calibration Coefficient	
	0 0 0	
	0 0 0	
	0 0 0	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		
O Extended Display		
Device Response Time		
100 🔹 ms		
Use input source for display		
Enable/Disable Calibration		
Disable		
O Brightnes Low Gra		
O Chroma		
O 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.

Figure 6-2 Offline calibration

- 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

- Full-grayscale calibration: Applicable to the A10s receiving card
- Low-grayscale calibration: Applicable to the A10s receiving card
- Dark or bright line correction: Applicable to the A8s receiving card
- Other functions: Applicable to all receiving cards and multimedia players

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 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click calibration or choose **Tools** > **Calibration** on 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	Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients		
Current Operation Communication Port COM99 ~	Select Operation		
Current Screen	O Upload coefficients		
Screen1	Save calibration coefficients to database		
	Set coefficients for a new receiving card		
	IIII Set coefficients for a new module		
	Adjust coefficients (Color is not uniform on screen)		
	Erase or reload calibration coefficients		
Settings of Displaying Image Position to Display Image:	C Reset calibration coefficients		
O Extended Display	Upload coefficients (for factory use)		
Device Response Time 100 ms	📥 Module Flash		
Use input source for display	Opload thermal compensation coefficients		
Enable/Disable Calibration			

Step 6 Perform the following operations as required. During the operation, you can select **Disable Calibration**, **Brightness Calibration**, **Chroma Calibration**, or **Full-grayscale Calibration** on the left. **Dark or Bright Line Correction** and **Low-grayscale Calibration** 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: 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. The coefficients for full-grayscale calibration will also be saved if **Full-Grayscale** is selected.

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 not 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 the receiving cards and modules based on their addresses or the topology.

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

- Coef Type: The calibration coefficient type, including normal coef, low-grayscale coef, and full-grayscale coef.
- SPI Bit Rate Level: The speed level of reading and uploading the calibration coefficients, 4 levels included
- Auto Upload Module Calibration Coefficients: When this function 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.

Upload thermal compensation coefficients

Import the thermal compensation coefficient file or read the coefficients from the hardware to adjust the red, green and blue coefficients individually, and send and save the coefficients.

- Adjust: Set the stepping of adjusting the coefficients.
- Enable Temperature Calibration Coefs: Apply the coefficients and check the effect on the screen.
- Clear: Clear the pixel level brightness and chroma calibration coefficients.
- Export: Export the thermal coefficient file.
- Erase: Erase the thermal coefficients.

Note

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

Screen:1 Starting coordinateX=0, Y=0 Size64V×32H	
○ Full ○ Select by pix	
	Zoom:

- 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 specify an area with the software, you can select Select Area on Screen to specify an 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.



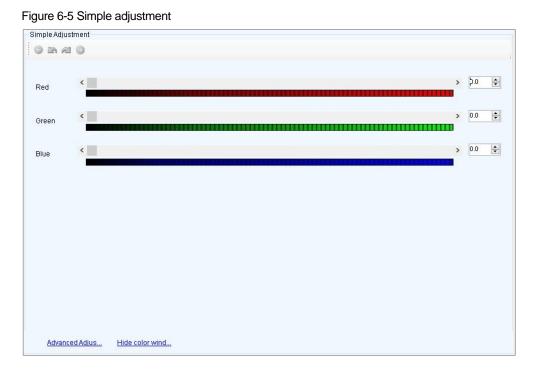


Figure 6-6 Advanced adjustment



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 Log in to the multimedia player. For details, see 4 User Login.



- Step 2 Click calibration or choose **Tools** > **Calibration** on the menu bar.
- Step 3 Select the Single-Screen Mode tab or Combined-Screen Mode tab.
- Step 4 In single-screen mode, select the screen you want to operate. In combined-screen mode, skip this step.
- Step 5 Select the Double Calibration Coefficients tab.

Figure 6-7 Managing double calibration coefficients

Screen Calibration	-	\Box \times
Single-Screen Mode Combined-Sc • • Online Calibration Offline Calibration Manage Coefficients Double Calibration Coefficients		
Communication Port		
Current Screen		
Screen1		
View calibration coeffi. View calibration coeffi. Acquisition of factory		
Their canonatori community community (rear canonatori community) (rear canonatori community)		
-Settings of Displaying Image		
Position to Display Image:		
Primary Display		
O Extended Display		
Device Response Time		
100 🗘 ms		
Use input source for display		
Enable/Disable Calibration		
Disable		
O Brightnes Low Gra		
O Chroma		
O Full-Graysc Coef Type: Normal Coef ✓		
Dark or		

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

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

- Gamma interlink: Applicable to receiving cards with TBS6332 or TBS6336 chips.
- Other functions: All receiving cards and multimedia players.

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 Log in to the multimedia player. For details, see 4 User Login.



- Step 2 Click Brightness or choose Settings > Brightness on the menu bar.
- Step 3 Drag the slider to adjust brightness and select **Grayscale** or **Contrast**. You can also set **Gamma Interlink** if the screen is using receiving cards with TBS6332 or TBS6336 chips.

Figure 6-8 Manual brightness adjustment

	Manual Adjustment	O Auto Adjustment	
Brightness			
Brightness	٤	>	255 (100%)
Advanced Settings Gamma	Grayscale Color Te Color Spa	Contrast	
Gamma			
Gainina			
 Gamma 	<		2.8
	< Configuration		2.8

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Step 4 Do the following as required:

Adjust Gamma

Select **Gamma Value Adjustment**, drag the slider to adjust the Gamma value, or set a custom Gamma by referring to the description in Custom Gamma.

Adjust color temperature

Choose Rough Adjustment and drag the slider to adjust the color temperature. Or choose Precise

Adjustment and click a custom color temperature to use it, such as temperature, see the description in Custom Color Temperature.

Adjust color space

Disable color space, enable a standard color space (PAL/NTSC), or enable a custom color space, such as

 Disable
 PAL
 NTSC
 Cus...

 .
 To set custom color space, see the description in 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 On the Gamma Adjustment page, select Custom Gamma Adjustment.

Figure 6-9 Custom Gamma adjustment 1

Step 2 Click **Configuration** to open the dialog box shown in Figure 6-9. When using receiving cards with TBS6332 or TBS6336 chips and **Gamma Interlink** is selected, click **Configuration** to open the dialog box shown in Figure 6-9.

-					
Gamma Adjustment					×
Gamma Adjustme. White 💿 R	ed Gamma	⊖ Green	O Blue Gamma		
Grayscale Bit Val 14					
14	/				
Gamma table can be generated quickly by a	adjusting	Gamma tab	le can be fine-adjusted by edit	ing t	the values
X-axis Range 0 ᅌ _ 255	-	X	Y	^	
Y-axis Range 0 🔶 _ 65535	÷	▶ 0	0		Move Up
		1	4		Move Dow
Gamma <	> 2.8	2	8		
Recommended Gamma		3	12		Save
Original O Mode A O Mode A	ode B	4	16		Load
Distance Our site		5	20		
Picture Quality		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	~	
			Send		Exit
here a second					

		djustment 2				
Customize G	iamma Adjustment			-		Х
amma Adjustr	me () White	O Red Gamm	a 🔿 Green Gamma	O Blue	e	
imma table c lues in Gamr	an be fine-adjusted b na table	y editing the				
X	Y	^	Gamma		>	2.8
▶ 0						
1	3361					
2	6722					
3	10083					
4	13444					
5	16805					
6	20165					
7	23526					
8	26887					
9	30248					
10	33609					
11	36970					
12	40330					
13	43691					
14	47052					
15	50413					
16	53774					
17	57134	~				

- 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

Click **Load** to load a Gamma configuration file.

Adjust the Gamma values manually

Drag the slider to adjust the Gamma values.

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 maximum range is 0–255.
 - Y-axis Range: It indicates the range of Y-axis for Gamma curve. The maximum range is 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 6-11.

Figure 6-11 Custom color temperature

172.18.12.90:5200-Sc ture Table prompts	reen1		Import	Export			D	fresh
prompts							Re	
l color temperature se delete the selected col	ction or tempe	rature sectio			r the information in t	ne current color tem	perature sectio	n)
perature Brightness	s value	R gain	G gain	B gain	R brightness	G brightness	B brightne:	35
20	dit the selected color	dit the selected color temperat	dit the selected color temperature section (dit the selected color temperature section (including the deletion of the selected row, clea	tit the selected color temperature section (including the deletion of the selected row, clear the information in t	tit the selected color temperature section (including the deletion of the selected row, clear the information in the current color tem	tit the selected color temperature section (including the deletion of the selected row, clear the information in the current color temperature sectio

- 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 6-12.

	0	0						
A	dd Color Tem	perature In	formation					×
	Color Tempera	atu <mark>9600</mark>						
	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
								Delete
								Clear
								ок
								Exit

Figure 6-12 Adding color temperature information

Step 5 Click Add Brightness to open the dialog box shown in Figure 6-13.

Figure 6-13 Adding brightness information

Add Brightness Information	×
Set Color Temperature Information Brightness Value 🔟 🕺	
Current Gain	
R	> ~ %
G	> ~ %
8 <	> ~ %
Synchronize	
Brightness Component	
R <	> 229 🚖 (89.80%)
G <	> 229 ≑ (89.80%)
B <	> 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 6-14.

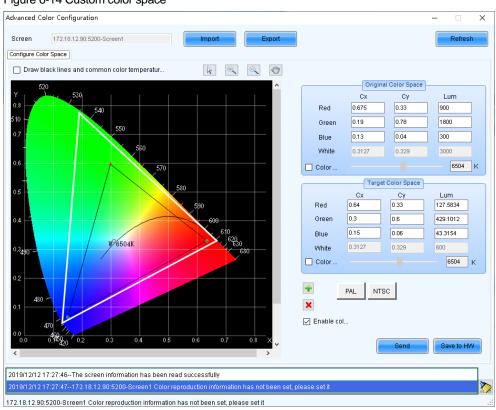


Figure 6-14 Custom color space

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.

6.3 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 multimedia players

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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Tools > More > Brighter Pixel Correction.

Figure 6-15 Brighter pixel correction

😼 Brighter Pixel Correction						-	
Topology Simulati	Sho	Show	(Select Display Display:	1		~
lopology Simulau				Display.	 Main 	O Extende	
1				Screen b	0		30%
				Import Databas			
				Database	Cabinet	O Full	
				Database			Browse
				Cabinet:			\sim
						Read	Coefficients
)
				Coefficie A	dvanced		
				Select			Reset
				N0.	Colurr Row	Red Gre	en Blue
				_			
							100%
					Averade		
					R: 0: B		
				Upload	Save to	HW Sa	ve Datab

- Step 3 Select a screen.
- Step 4 Select a position to display image.
- Step 5 Set the brightness of the display window.
- Step 6 Select a database type, for example, Cabinet.
- Step 7 Click Browse and select a database file. For example, select a cabinet calibration database file and click Open.
- Step 8 On the **Topology** page, select an area and then select the **Simulation Diagram** tab.
- Step 9 Click brighter pixels or select the area where there are brighter pixels and click V.
 - Click to select a brighter pixel.
 - Select 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 6-16 Selecting brighter pixels

💀 Brighter Pixel Correction							-		×
Topology Simulati	K 🔲 🔿 🔺 🛃 😒 😒	Select I Displ		1					
(species)		Displ		Ma	in	0	Extende.		
		Scree				0		 30%	,
		- Import	Databas	ie					
		Datat		• ca	abinet		Full		
		Datat	pase	GILC	T资料优化	{\viangti	CLB.db	Brov	//se
		Cabir	het	1-1				~	
							Read	Coefficie	onte
							(Leau	coenicie	
		Coeffic	ie A	dvance	d				
		Select.						Rese	et
			No.	Colu	n Row	Red	Green	Blue	^
				34	15	2047	2047	2047	1
			2	34	16	2047	2047	2047	
		\square	3	34	17	2047	2047	2047	
			-	34	18	2047	2047	2047	
				34	19	2047	2047	2047	-
				35	15	2047	2047	2047	-
				35	16	2047	2047	2047	-
				35 35	17	2047 2047	2047 2047	2047 2047	~
			9	135	10	2047	2047	2047	
		•-			-0			1	00%
				Av	erade				
			F	R:2047	G:2047	B:2047			
			Upload		Save t	o HW	Sa	we Datal	b



Step 11 After the settings are done, click Upload to save the configuration to the hardware.

Step 12 Click **Save to HW** to save the configuration information to the hardware.

Step 13 (Optional) Click Save Database to save the configuration to the current database file.

6.4 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 multimedia players

Prerequisites

None

Related Information

None

Operating Procedure

Figure 6-17 Factory settings

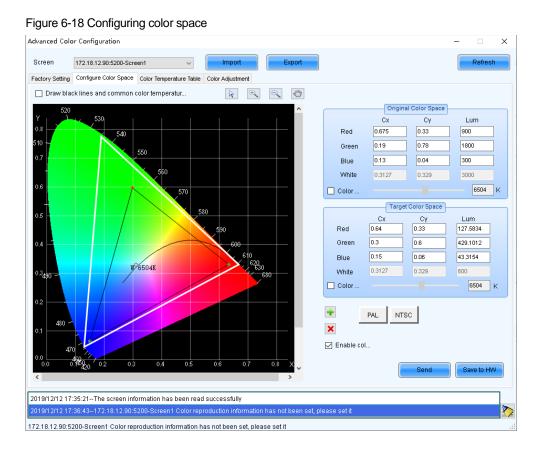
- Step 1 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Settings > Advanced Color Configuration.
- Step 3 Click **Import** to quickly complete the configuration or continue performing the following operations to complete the configuration manually.
- Step 4 On the Factory Setting tab page, adjust parameters and then click Save to HW.

Advanced Color Configuration Х Screen 172.18.12.90:5200-Screen1 Refresh \sim Factory Setting Configure Color Space Color Temperature Table Color Adjustment 100 % 100 100 % Default Value Synchronize RGB Brightness > 255 (100.0%) > 255 (100.0%) > 255 (100.0%) < Synchronize Save to HW The screen information 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.



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 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.

- 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 6-19 Color temperature table

wanced Col	or Configu	Iration						_		×
Screen	172.18.12	.90:5200-Screen1	~	Import	Export				Refresh	
actory Setting	Configure	Color Space Colo	or Temperature Table	Color Adjustment						
Operation	prompts									
The color	temperatu	re name box of s	elected color tempe	rature section is ye	llow					
Add'- add	color temp	erature section								
		elected color tem								
Edit' - to e	dit the sele	cted color tempe	rature section (inclu	iding the deletion o	f the selected row, clear	the information in t	ne current color temp	erature se	ection)	
Color temp	perature	Brightness value	R gain	G gain	B gain	R brightness	G brightness	B bria	ntness	7
<u> </u>						-				=
Add	Edit	Delete	Clear					Sav	red to loc:	al
19/12/12 17	7:35:21Th	e screen informa	tion has been read	successfully						٦
					on has not been set, ple	ase set it				
			stice information b	as not been set, ple	ana aat it					1

- 1. Click Add to open the dialog box shown in Figure 6-20.
- 2. Click Add Brightness to open the dialog box shown in Figure 6-21.
- 3. 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.

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

Figure 6-20 Adding color temperature information

7	Add Color Tem	nperature In	formation					×
	Color Temper	atu <mark>9600</mark>						
	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
								Delete
								Clear
								ОК
								Exit

Figure 6-21 Adding brightness information

3		
Add Brightness Information		Х
– Set Color Temperature Informa Brightness Value 📴	ation %	
Current Gain		
R	> ~ %	
G <	> ~ %	
В <	> ~ %	5
Synchronize		
Brightness Component		
R <	> 229 🔶 (89.80%)	
G K	> 229 🚖 (89.80%)	
в <	> 229 🔹 (89.80%)	
Synchronize		
Add	Exit	

Step 7 (Optional) Click Export to save the configuration as a file.

6.5 Adjust Screen Effect

Applications

Enable 18bit+, ClearView and receiving card low latency 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
- Receiving card low latency: Applicable to the A5s Plus, A6s, A8s, A10s Plus and AT60 receiving cards

Prerequisites

None

Related Information

The multimedia player does not support the sending card low latency and HDR functions.

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 receiving card low latency can reduce the delay by one frame.

Operating Procedure

- Step 1 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 Choose Settings > Adjust screen effect to open the dialog box shown in Figure 6-22.

ljust screen effect			– 🗆 X
72.18.12.90:5200-Scr	reen1		
Parameter Setting:	5		
Enable 18			
Enable	<	>	0 Save to HW
🗌 Enable sendi	na car 🗌 Ei	nable receiving car	
HDR Parameter Se	ettings		
Enable		\sim	Restore defaults
Peak Screen	<	>	1000 cd/m2
Ambient Light:	<	>	30 Lux
Low Graysca	<	>	15
Tip: Curren	t source is not HDR10. Pl	lease connect an HD	R10 video source.
Screen Informatior	1		
2019/12/12 17:46	:52Read receiving card	low latency paramet	ers success ^
2019/12/12 17:46	:52Reading HDR paran	neters	
2019/12/12 17:46	:52HDR parameters rea	ad successfully.	Clear
			Ulear

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 receiving card low latency
 Select Enable receiving card low latency and click Save to HW.

6.6 Set Image Booster Engine

Applications

Using a professional color analyzer (also called light gun or colorimeter) to correct the cabinet's optical factors (such as color gamut, brightness, grayscale, and color temperature) to achieve precise brightness control and accurate color display.

Applicable Products

Applicable to the A8s-N, A10s Plus-N, A10s Pro receiving cards

Color management is also applicable to the A5s Plus and A7s Plus receiving cards

Prerequisites

When collecting screen data, if you select the auto or custom collection method, CA410-VP427, CA410-P427 or CA410-P427H (use when the brightness exceeds 3000 nits) and the hardware connection must be completed.

Notice

Adjusting the receiving card parameters affects the display effect.

Related Information

When adjusting the effect parameters, it includes the color management, precise grayscale, and 22bit+ functions of the image booster:



Color Management 4

With the help of NovaStar's unique color management algorithm, the this function will realign the LED screen's color gamut to approximate the standard color gamut of BT.709, BT.2020 and D CI-P3, and eventually, the color gamut is adjusted to be consistent with the video source, eliminating color deviation and reproducing natural colors.

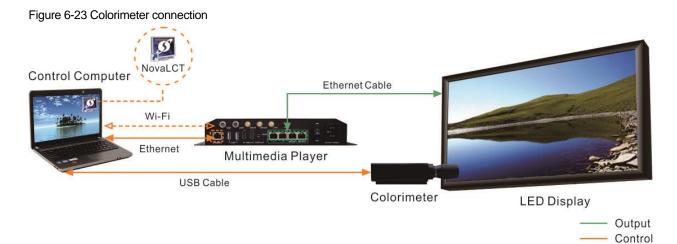
4 **Precise Grayscale**

With the help of professional optical instruments, individually correct the 65,536 levels of grayscale of the driver IC to fix the display problems at low grayscale conditions, such as brightness spikes, brightness dips, color cast and mottling and achieve pinpoint accuracy in grayscale control, allowing for a significant improvement in the quality of LED display images.

22bit+ 4

Harnessing the power of image quality algorithms, the bit depth of low shades of grayscales on the screen is elevated, resulting in an incredible 64-fold surge in dynamic contrast. This process effectively addresses common issues such as grayscale loss and contour lines that arise in case of insufficient grayscale on the screen, allowing for richer grayscale shading and intricate detail presentation for on-screen images.

When you collect the screen data, ensure the colorimeter touches the screen closely. The hardware connection is illustrated in Figure 6-23.



Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.

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

Step 3 On the Correct Cabinets screen, click Please refresh and select device located at the top left corner.

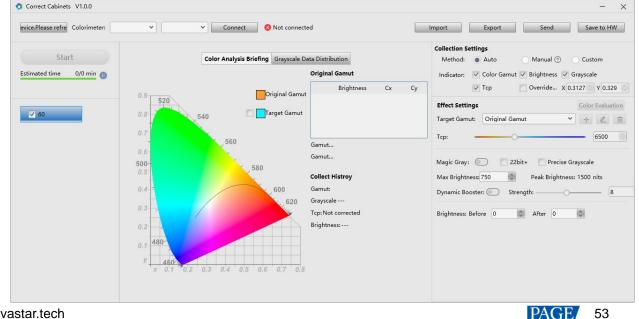


Figure 6-24 Cabinet correction

Step 4 In the **Device Management** dialog box, click **Refresh** and select a device from the drop-down options.

Figure 6-25 Device management

Device Management			×
Controller	✓ Q Ref ?		
Online Cabinets: 1 Selected 1			
No. Cabinet Location Cabinet Manufactor	Cabinet Model 🆓	Rv Card Model 🖓 - Firmware Version 5	5
 1 S1-P1-1 unknown 		A10s Pro V1.1.3.9 ⑦	
		Cancel	ОК

- Step 5 Select the cabinet you want to operate and click OK.
- Step 6 On the left of the screen, select a frame rate.
- Step 7 Do the following according to the screen data collection method.
 - Automatic
 - a. Set the collection method to Auto.
 - b. Select a colorimeter model from the drop-down list.

When the hardware connection is normal, the software will automatically establish communication with the colorimeter after selecting a model.

- c. Click Start to automatically collect the screen data through the colorimeter.
- Manual
 - a. Set the collection method to Manual.
 - b. Select **Color Gamut**, manually collect the screen data, and then double-click the color gamut value in the table and modify it.
 - c. Select Brightness and then set the brightness before and after calibration.
 - d. Click Start to make the color gamut and brightness data take effect.
- Custom
 - a. Set the collection method to Custom.
 - b. Set the collection indicators.
 - c. Click Start to automatically collect the screen data through the colorimeter.

Notes

If an image quality file (.nrf/.vglcx) is available, you can click **Import** to import the image quality data and then adjust the effect parameter.

- Step 8 Under the Effect Settings, set the following parameters and view the effect on the screen.
 - Target gamut

Select a target gamut from the drop-down list. To view the target gamut in the color gamut diagram, select **Target Gamut** in the middle area of the **Correct Cabinets** screen.



Do the following to add custom gamut.

- × Original Gamut Custom Gamut Gamut Name: 520 Baseline Gam... Based on DCI-P3 v 540 Gamut... Brightness Cx Су Red 900.0000 0.6800 0.3200 560 Gree 1,900.0000 0.2650 0.6900 0.1500 0.0600 Blue 320,0000 Whit 3,120.0000 0.3140 0.3510 500-580 0.4 600 620 480 ОК
- a. Click 💷 on the right of the drop-down list to open the adding custom gamut window.

- b. Enter a custom gamut name.
- c. Select a baseline gamut from the drop-down list.
- d. Double-click the cells in the table to change the gamut values or drag the vertex of the black triangle in the color gamut diagram to modify it.
- e. Click OK once you are done.

Select a custom gamut and then click used to edit it, or click it to delete it.

Color Temperature

Drag the slider to set the color temperature, or set the value in the entry box.

Magic Gray

Toggle switch to enable/disable this function. When this is enabled, **22bit+** and **Precise Grayscale** can be selected.

Max Brightness

Set the max brightness of the screen in the entry box. **Peak Brightness** is the max brightness measured by the colorimeter.

Dynamic Booster

Toggle switch to enable/disable this function. When this is enabled, drag the slider to adjust the intensity of the Dynamic Booster.

Brightness

Set the brightness before and after calibration to adjust the effect.

- Step 9 Click **Export** to save the configuration into a file.
- Step 10 Click Send to send the configuration to the hardware, or click Save to HW to save the configuration to the hardware.
- Step 11 If you want to evaluate the color precision, do the following.
 - 1. Click Color Evaluation.



aluate Colo/	r Precision						>
valuate Color:	•						
tart Evaluation	Export Report		🔲 Display Demo	Switching I	nterval 1 s 🗘	Start Demo	Stop
tandard Color	Color Value	CIE31(Lxy)	sured Value Before MGMT	DeltaE	Measured Value (Lxy)	DeltaE	
	#745244			0		0	
	#D9792F			0		0	1
	#2E3E95			0		0	1
	#F9F3ED			0		0	1
	#C49582			0		0	-
	#455CA3			0		0	1
	#45924A			0		0	1
	#C8C8C7			0		0	
	#5C799B			0		0	
	#B12D38			0		0	1
	#5B6B45			0		0	1
	#5A3D67			0		0	1
	#EBC32F			0		0	-
	#777978			0		0	
	#827FAC			0		0	7
	#9DB848			0		0	1
	#BD5290			0		0	7
	#535454			0		0	7
	#5DBAA8			0		0	1
	#E39E34			0		0	
	#0083A2			0		0	7
	#363637			0		0	

- 2. On the Evaluate Color Precision screen, select a gamut from the drop-down list and click Start Evaluation.
- 3. Select **Display Demo**.
- 4. Click any of the colors in the table and check their effect 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.
 - 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.
- 5. Deselect Display Demo, click Export Report to save the evaluation result into a file.

6.7 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 multimedia players

Prerequisites

None

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.

Step 2 From the menu bar, choose Tools > More > Device Settings.



Figure 6-26	Batch	checking	calibration	effects

				×
Select Function	Select	COM Port	Device	Device Quantity
Restore calibration mode		192.168.41.1:5200	T6	1
Enable/Disable calibration				
Disable calibration				
O Brightnes				
O Chroma calibration				
Select all	Select all			
				Setting

- Step 3 In the device list, select the device of which you want to check the calibration effects.
- Step 4 Select Enable/Disable calibration and click Setting.
- Step 5 Click **OK** to close the prompt box.
- Step 6 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

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 multimedia players

Prerequisites

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

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.



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

Screen Configuration	->	<
-Select Communication	Port	
Current Operatio	172.18.12.29:5200	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse)
	Next Close)

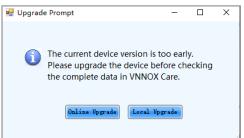
- Step 3 Select Configure Screen and click Next.
- Step 4 On the Screen Configuration page, click Save System Configuration File to open the dialog box shown in Figure 7-2.

Figure 7-2 Saving configuration files

💀 Save System Files to Cloud 🛛 🗙	<
VNNOX Care Use	
Password	
Soreen Name Taurus-40002453	
System Config	
System Config 1. Sending card backup file	
2、Receiving card backup file 3、Screen connection file	
4 v Receiving card/NovaLCT	
Save	
The screen is already registered	•

- Step 5 Enter your VNNOX Care user name and password, set the screen name and system configuration file name, and select a server node
- Step 6 After the parameter settings, click Save.
- Step 7 Do the corresponding operation below based on the multimedia player firmware version.
 - Firmware version V3.3.0 or later: After the configuration file is saved, close the prompt box. No further action is required.
 - Firmware version earlier than V3.3.0: Go to Step 8.
- Step 8 Do any of the following operations to upgrade the firmware version and save the configuration file to cloud and local PC. (The device will automatically restart during upgrade.)

Figure 7-3 Upgrade prompt



- Online upgrade
 - a. Click **Online Upgrade**.
 - b. In the pop-up dialog box, click Upgrade.
 - c. After successful upgrade, close the dialog box.
- Local upgrade
 - a. Click Local Upgrade.
 - b. Select a firmware package from local PC and click **Open**.
 - c. After verification, click Upgrade in the pop-up dialog box.
 - d. After successful upgrade, close the dialog 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 View and Configure Monitoring.



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 multimedia players

Prerequisites

You have a valid VNNOX Care account.

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 7-4.

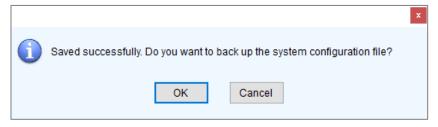
Figure 7-4 Screen configuration method

Screen Configuration		×
Select Communication	Port	
Current Operatio	172.18.12.29:5200	
Configure Screen		
O Cloud Restore	~	
O Local Restore	Browse]
	Next Close	

- Step 3 Select Configure Screen and click Next.
- Step 4 On the Screen Configuration page, click Save.
- Step 5 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 7-5 Successful saving



Step 6 After successful saving, click Close.

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



Figure	7-6	Saved	successfull	y
--------	-----	-------	-------------	---

🖷 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 scr to VNNOX Care after the PC is connected to the Internet.	
Close	

Step 7 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 7-7.

Figure	7-7	Local	backup	files
--------	-----	-------	--------	-------

			-		×
e screen configurati	on. The backup file				
Device Model	Remarks	Saved	Binding	Status	
Т6		9/27/2021 4:54 PM	Unbound		
Bind	Delete	-			
	e soreen configurati ter the PC is connec Device Model T6	e soreen configuration. The backup file ter the PC is connected to the I Device Model Remarks T6	e soreen configuration. The backup file is convenient for y ter the PC is connected to the I Device Model Remarks Saved T6 9/27/2021 4:54 FM	e soreen configuration. The backup file is convenient for you to bat ter the FC is connected to the I Device Model Remarks Saved Binding T6 9/27/2021 4:54 FM Unbound	the device system configuration file saved in the local PC when you click e screen configuration. The backup file is convenient for you to batch bind ter the PC is connected to the I Device Model Remarks Saved Binding Status T6 9/27/2021 4:54 FM Unbound

Step 8 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 9 Select the backup file records of one or multiple devices and click Bind.
- Step 10 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**.

Figure 7-8 Binding to VNNOX Care

🖷 Bind to VNNOX Ca	re	×
Vser Name		
Password		
	OK	
	American	•

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 multimedia players

Prerequisites

You have a valid VNNOX Care account.

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click Screen Configuration or choose Settings > Screen Configuration from the menu bar to open the dialog box shown in Figure 7-9.

Figure 7-9 Screen configuration method

Screen Configuration	×
-Select Communication	Port
Current Operatio	172.18.12.29:5200
Configure Screen	
O Cloud Restore	~
O Local Restore	Browse
	Next Close

Step 3 Select Configure Screen and click Next.



Step 4 On the Screen Configuration page, click Export Screen Monitoring Data to open the dialog box shown in Figure 7-10.

Export Screen Mc	Export Screen Monitoring Data				
File Name					
Location	C:\Users\zlkf-gy01\Desktop				
File Content	 Screen monitoring data Sending card backup file Receiving card backup file Screen connection file Receiving card/NovaLCT versions 				

Figure 7-10 Exporting screen monitoring data

- Step 5 Set a file name, click 🛄 to select a location and click **Save**.
- Step 6 After successful saving, click **OK** to close the prompt box.
- Step 7 When the control PC can access the Internet normally, log in to VNNOX Care.
- Step 8 Go to **My Services** > **Screen Management** to enter the screen management page.
- Step 9 Click Add Screen, select the exported screen monitoring data file and click Upload.

7.2 View and Configure Monitoring

Applications

View the monitoring information and configure the monitoring parameters to monitor the statuses of multimedia players, receiving cards, receiving card temperatures, monitoring devices, as well as humidity, smoke, fans, power supplies, cables, cabinet doors, modules, iCare, 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 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.
- 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

Step 1 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click monitoring or choose **Tools** > **Monitoring** on the menu bar to open the monitoring page.

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

Figure	7-11	Monitoring
--------	------	------------

172. 18. 12. 90: 5200-Soreen1 Image: Comparison of the second	
Image: Second state of the second s	
Total Quantity of Receivin 1 Fault (alarm) Information Quantity of Faulted Receiving 0 Quantity of Faulted Receiving 0 Quantity of Cards: Configure	
Screen Name Image: Constraint of the state	
Care status:Offline	

Note:

- 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 Configuration to set the monitoring parameters.

Refresh Period

MonitorSite - Sett	ings	×
MonitorSite - Sett Refresh Feriod Hardware Settings Alarm Email Email Log	Refresh Period Automatio Refresh 60 \$ Set Rereading Times When failing to read status, the 0 \$ Times Link to NovaiCare Link to NovaiCare	X
	Se	av e

Set the necessary items below 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.

For multimedia players, there is no need to select Link to NovaiCare.

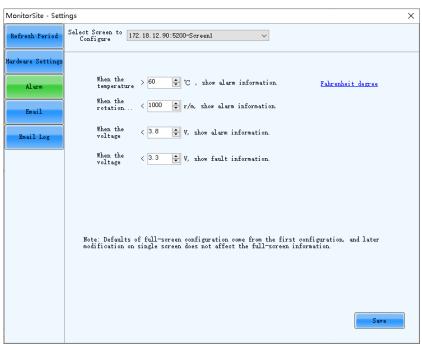
Hardware Settings

MonitorSite - Sett	ings	×
Refresh Period	Select Screen to Configure 172.18.12.90:5200-Screenl	
Mardware Settings	Connect to Monitori Setting Connect to HUB Monitoring Connect to Smart Module Use 2 receiving car	
Email Email Log	Refresh Backup Power Supply Backup Power Supply Quantity	
	Refresh Humidity Refresh Smoke Refresh Ribbon Cable Refresh Cabinet Door Status]
	Fan Pulse: 1 PCS/r Set fan quantity uniformly Set fan quantity individually Setting 	
	Refresh Power Supply of Monitoring Card The numbers of power supplies on eac 3 Set power supply quantity individually Setting	
	Note: First time configuration is the default for full screen, later modification will not	

Set the necessary items below 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, 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.

🕈 Email

MonitorSite - Settir	ngs		×
Refresh Period		mail when same fault/	3 🗸 Times sending
	Enable System Recovery Notification		
Hardware Settings	Enable Sending System Report Email		
	Send system report email regularly		
Alarm	Email Sender		
	Email Address novalct@novastar.tech	Port	25
Email	SMTP Server smtp. giye. 163. com	SSL Encryption	Enable
Email Log	Modify Sender		Use Default
	Recipient		
	Name 111 nova_huixy@J	Email address	
	-Email Information		
	Sending Email A-1	(e.g.:Neighborhood A,	Square B)
	Tip: If the display has been registered with	NovaiCare, please disabl	e local Email notification Save

Select Enable Email Notification. Set the necessary items below 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 then 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.



MonitorSite - Setti	ngs					>
Refresh Period	Log Time	- 2019年12月	12日	•	Refresh	Delete Log
Hardware Settings	Notification Time	Recipients	Title	Notifi	cation Content	
Alarm						
Email						
Email Log						
	<					



8 Screen Management

8.1 Multi-function Card Management

Applications

4

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

Applicable Products

The MFN300 multifunction card

Prerequisites

Hardware connections for the multifunction card are done.

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click Multi-function Card on the menu bar.

Figure 8-1 Multifunction card management

Multi-function Card Management		×
Add Remove Refresh Rename _■ :++- X 22 🔜 48	Power Management Monitoring Data Peripheral Device Load Program	
Set the number of cards with load at port:Success	sfull	

Step 3 Click Add and select the connection type of 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 multimedia player or receiving card.

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

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 4 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 multifunc	tion card
-----------------------------	-----------

Add Multi-function Carc		Х
Communication Port	172.18.12.90:5200 ~	
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	Time of Powe	ment Monitoring Data Pe er Management Board Sunday 04:54:24	eripheral Device Load Pr	ogram Set Notes Start Delay
			Refresh	Start All Emergency St.
	Manual	🔿 Automati		Advanced
	Switch 1	Start Stop	Please select	~
	Switch 2	Start Stop	Please select	~
	Switch 3	Start Stop	Please select	\sim
	Switch 4	Start	Please select	~
	Switch 5	Start	Please select	\sim
	Switch 6	Start	Please select	~
	Switch 7	Start	Please select	~
	Switch 8	Start Stop	Please select	\sim
			Send	Readback
		9:14Read the status of al 9:19Read the status of al		

Figure 8-3 Ethernet port connection

Step 5 Use any of the following functions as needed.

Power Management

Multi-function Card Management						×
Add Remove Refresh Rename	Power Manager		-	eripheral Device Load P	rogram	
È,№ Port-2	2019-12-08 8	Sunday 04:54:	24	Read	Set Notes	Start Delay
				Refresh	Start All	Emergency St
	Manual	\bigcirc i	Automati			<u>Advanced</u>
	Switch 1	Start	Stop	Please select	\sim	
	Switch 2	Start	Stop	Please select	\sim	
	Switch 3	Start	Stop	Please select	\sim	
	Switch 4	Start	Stop	Please select	\sim	
	Switch 5	Start	Stop	Please select	\sim	
	Switch 6	Start	Stop	Please select	\sim	
	Switch 7	Start	Stop	Please select	\sim	
	Switch 8	Start	Stop	Please select	\sim	
				Send	Readback	
	2019/12/13 10:1	0:36Start all	powers of m	ultifunction card:Success	ful	^
	2019/12/13 10:1	0:37FuncCa	ard_SetPower	rPortCtrlTotal:Successful		-
Read emergency control status of power in multi	ifunction card Succ	essfull				

Read energency control status of power in multifunction card. Succession

- 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.
- Advanced: Set the time for the automatic time synchronization between the multifunction card and PC.

Monitoring Data

ti-function Card Management X
dd Remove Refresh Rename Y 172.18.12.90.5200
i → Player-1 Onboard Monitoring Data
Temperature 32°C
Humidity 22%
Voltage 4.9V
No monitoring card has been connected currently
Refresh
2019/12/13 10:13:24Read temperature of monitoring card in multifunction card:Successful
2019/12/13 10:13:24Read all status of monitoring card in multifunction card:Successful
d all status of monitoring card in multifunction card:Successful!

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

Peripheral Device

Multi-function Card Management	×
□ → Payer-1 □ → ¥ Port-2	whitoring Data Peripheral Device Load Program
Peripheral device 1	No external device V
Peripheral device 2	No external device 🗸
Peripheral device 3	No external device 🗸
Peripheral device 4	No external device 🗸
Peripheral device 5	No external device \sim
Peripheral device 6	No external device \sim
	Refresh Save
Read all status of monitoring card in multifunction card:Successful!	

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

Load Program

Multi-function Card Management X
Add Remove Refresh Rename Image: Training of the second
Read all status of monitoring card in multifunction card:Successful!

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

Type "admin" to access 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		×
Add Remove Refresh Rename Add Remove Refresh Rename The second secon	Power Management Monitoring Data Peripheral Device Load Program Multi-function Card Information Model of Multi-function C FPGA Note of Multi-function Card	Refresh
	Load program for selected Multi-function Card(172.1 Select Program Program Name Program Version Program Path	Exit Browse Change
Read all status of monitoring card in multifunction	1 card:Successfull	

8.2 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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Settings > Receiving Card Relay.

Figure 8-4 Setting receiving card relay

-	eiving Card Rel	ау		_		×
- Serial Port Sele	ection					
Serial Port	172.18.12.90:52	00				~
Screen1						
– Parameter of F	Receiving Card F	Relay				
◉ Disc	onnected					
🔿 Con	nected					
🔿 Auto	matic					
- Temperature	UnderAutomatio	: Mode ——				
Temperature Connected R		* °Ć	Temperature of Disconnected Relay	30	A V	°C
			Refresh	S	end	
-Receiving Car	d Timing Clearin	g				
Rec	ord Time 1	11Days 8Hoi	urs 26Minutes			
			Refresh	Timing	Resettin	g

Step 3 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.

8.3 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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Settings > Configure Information Management.

Figure 8-5 Configuration file management

Configuration File Manageme	nt	×
Import Configuration Expor	t Configuration Cance	1

Step 3 Perform any of the following operations as required.

Import Configuration

Click Import Configuration and 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.

8.4 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

All receiving cards and multimedia players

Prerequisites

None

Related Information

None



Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.

```
Step 2 Click see or choose Tools > Screen Control on the menu bar.
```

Screen Control		×
172.18.12.90:5200-Screen1		
Display Control Black Out Freeze	Normal	
Self-Test: Normal 🗸	Send	
Cabinet LCD Backlight Control	Send	
		Close

Step 3 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.

8.5 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 5.4 Set Performance Parameters.

Related Information

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

Operating Procedure

- Step 1 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Tools > Module ID setting.
- Step 3 Click Refresh to view the module IDs.



Figure 8-7 Viewing module ID

🖶 Module ID settings		>
JSB@Port_#0003.Hub_#0001-Screen1		
Sending card1 Ethernet port1 Receiving card1 BUS:1 Flash No.:1 ID: 0-0	Sending card1 Ethernet port1 Receiving card2 BUS:1 Flash No.:1 ID: 1-0	Scaling rate
		Refrest

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

Figure 8-8 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.

9 Screen Maintenance

9.1 Firmware Program Update

Applications

Check the current firmware program version of the receiving card and sending card, and update the program.

Applicable Products

All receiving cards

Prerequisites

The program update package is prepared.

Related Information

None

Operating Procedure

- Step 1 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 Type "admin" open the program loading window as shown in Figure 9-1.

Figure 9-1 Program loading

Program loadingthe current communication port has device accessed	_		×
Program loading			
Select the communication port for operation			
Communication port for the current operati 192.168.41.1:5200		Reconnect	
Program updating			
Program Pat		Browse	
Advanced		Update	
Extend the operation item	_		
Read-back of recei			
Linder Deneral Maria Manufac			
Hardware Program Version Information			
Refres ○ Refres Sendi 1 ♀ Outp 1 ♀ Recei 1 ♀ Refres Refres		Refresh	
Information Console			
		Clear	

Step 3 Choose a communication port.

If you need to reconnect the multimedia player, click **Reconnect**.



Step 4 Specify the refreshing range and click **Refresh** to view the current program version of the hardware.

If the module has an MCU, select **Refresh Module MCU** to view the MCU version.

Figure 9-2 Viewing program version
Hardware Program Version Information

Refres...
Ref

- Step 5 Click Browse, select a program package, and click OK.
- Step 6 Click Advanced, select the items to be updated, and click OK.
- Step 7 Click Update.
- Step 8 Choose to update the programs of all receiving cards or the specified receiving card, and then click OK.

I igure e e eeleeting eelite	inicae
😼 Select a send mode	×
 All receiving cards 	
 Specified receiving c 	ard
Sending card	1
Ethernet port:	1
Receiving card:	1
ОК	Cancel
Specified broadcast data ope	erating tips:
Broadcast corrsponding value	es: sending card(256); Et 😯

Figure 9-3 Selecting send mode

Step 9 After the programs are updated successfully, click **OK**.

Note

If the receiving card supports program readback, click **Read-back of receiving card program** to save the receiving card program to a specified location.

9.2 LED Error Detection

Applications

Detect the damaged LED lights and locate them on the screen.

Applicable Products

The MRV320 and MRV560 receiving cards

Prerequisites

• The module driver chip must be support LED error detection.



• 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

The multimedia player does not support smart module monitoring.

Operating Procedure

- Step 1 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose **Tools** > Led Error Detection.

Figure 9-4 Led Error Detection

d Error Detection					- <u> </u>
ommunication Port Sel	-				
ommunication Port	192.168.0.10:5200	~			
creen1					
Screen Topological Dia;	gram				
					Zoom
					^
					✓ 1.0
					Unknown
					Error
					Normal
					No Monito
_ed Error Detection Par	ameters				
Detection Type		d Short Circuit Detection			
Threshold Voltage	 I 		O 3	O 4	
	Enable	Change Setting	0.5	U #	
Current Gain	Endbic	Change Seamy			
Bi-Color LED Error	Enable	Change Setting			
		Save Confi	Conduct led.	Led error d	Pause Stop
			Conduct led.	Led error d	
			Conduct led.	Led error d	Pause Stop
			Conduct led.	Led error d	
			Conduct led.	Led error d)	

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**.

d Error Detection					—
communication Port Sele	ection				
ommunication Port	192.168.0.10:5200	~			
Creen1					
Screen Topological Diag	Iram				
	•				Zoom
24582					✓ 1.0
					Unknown
					Error
					Normal
					No Monito
Led Error Detection Para	ameters				
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	Pause Stop
019-11-08 05:16:03Scr	reen1:Led error deter	tion is being initialized, p	olease wait		^
		error detection! The nun			

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 9-6.



Figure 9-6 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 Log in to the multimedia player. For details, see 4 User Login.
- Step 2 On the menu bar, choose Tools > More > Reset Run Time.

Figure 9-7 Resetting run time

Reset Run Time		×
Current Communic 172.18.12.90:520 Soreen List: Screen1	Cabinet Run Time on LCD Cabinet Run Time on LCD: 11 day 8 hour 55 minut Reset	

Step 3 Select a screen.

Step 4 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 Log in to the multimedia player. For details, see 4 User Login.

 $Step \ 2 \quad On \ the \ menu \ bar, \ choose \ \textbf{Tools} > \textbf{More} > \textbf{Bit Error Detection.}$

Step 3 Click Manually as shown in Figure 9-8.

it Error Detection						-	
Device							
All 	Auto Refre	esh 1 🛊 Min Manuall	.y			C.	lear
Sending card1	Bit Error Inf	formation					
	Status	Sending card	Ethernet Port	Receiving Card	Error Details	Locate	Clear Errors
		172.18.12.90:5200-Sending card1	Port1	Receiving	<u>Errors:0 2019年12月13日 10:56:28</u>	Locate	Clear

Step 4 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 5 (Optional) Select Auto Refresh and set the refreshing period.

9.5 Send NCP Files

Applications

Send the NCP file exported from the Cabinet Tool software to the receiving card to update its firmware program and configuration parameters.

Applicable Products

All receiving cards

Prerequisites

The NCP file (.cnp) is prepared and the applicable models in the file matches the currently used receiving card.

Related Information

None

Operating Procedure

Step 1 Log in to the multimedia player. For details, see 4 User Login.

Step 2 Choose Tools > More > Send NCP from the menu bar.



Figure 9-9 Selecting the communication port

Screen Configuration			×
-Select Communication	Port		
Current Operatio	192.168.41.1:5200	~	
		Next	Close

- Step 3 Select a communication port and click Next.
- Step 4 On the Manage NCP dialog box, go to the Send NCP tab and configure the data transmission method according to the descriptions below.
 - Send by topology

Select a screen and then select Full Screen. You can also select the target cabinets and choose Select by Ethernet port or Select by cabinet.

• Send by physical addresses

Double-click on the cell and enter the sending card number, Ethernet port number, and receiving card number.

NCP Mana	-						_		Х
	Adjust Para								
	opology Sen								
-Screen s			Select Cabinet						
	Select All		Full Screen (Select by Ethernet Po	rt 🖲 Select by Cabinet				
Scree	n1								
							_		_
								Zooming	
								^	
			(1,1)	(1,2)	(1,3)	(1,4)			
							-		
								~	
								1.0	
			(2,1)	(2,2)	(2,3)	(2,4)			
	NCP File	Please b	rowse local files		Browse				
(Cabinet File				\sim				
	isplay Mode				Switch Mo	to			
D	isplay would								
						Send to t	he Spe	cified Rv Ca	ard

Figure 9-10 Send NCP

Step 5 In the displayed dialog box, select an NCP file and click **Open**.

- Step 6 Select a cabinet file and display mode.
- Step 7 Click **Switch Mode** if you only need to send configurations included in the display mode. If you also need to send firmware program and other parameters, please continue with the following steps.
- Step 8 Go to the Adjust Parameters tab and adjust the parameter values as needed.

The **Rv card indicator** is used to set the operating indicator (green light).

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ICP Manage							
Send NCP Adjust Paramet	ers						
Send By Topology Send B	y Physical Address						
Screen selection	Select Cabinet						
Select All	O Full Screen	O Select by Ethernet F	Port Select by Cabinet 				
Screen1							
	(1, 1)	(1,2)	(1,3)	(1,4)	Zooming		
			(1,2) (1,3)		(1,2) (1,3)		-
	(2, 1)	(2,1) (2,2) (2,3)		(2,4)	1.0		
Rotate Cabinet Rv Card	O O	○ 180° ○ 2	270*				
Indicators:	On Off						
	<		> 153 (60.0%)				
Brightness:			> 6500 K				
Color Temperature:	<						
Color	<		> 2.8				

Step 9 Click **Send to Specified Rv Card** once you are done to send the firmware program and configurations to the receiving cards.



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 multimedia players

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 Log in to the multimedia player. For details, see 4 User Login.



Step 2 Click Test Tool on the menu bar.

Step 3 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 move the test pattern to the extended display.

Figure 10-1 Setting window parameters

🐋 Test	Test Tool of LED Screen-Novastar									×
Window	Pure Color	Gradual Change	Grid	Orientation	Help					
х	<		>	0	Width	۲.		>	64	÷
¥	<		>	0 📫	Height	<		>	32	÷
r			-	Ĭ	nergut			-		•
							Show		Hi de	
							Show		ліае	

Step 4 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.
Gradual Change	• Select a color.
	Select a grayscale level.



Tab Name	Function Description
	Set the test pattern stretching times.
	• Set the gradient moving style.
	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 receiving card lines.

Figure 10-2 Setting orientation parameters

🐭 Test Tool of LED Screen-Novastar 🧧 🗌								×	
Window Pure Color	Gradual Change Grid	Orientation	Help						
	Module			Lo	ading Module	of Receivi	ing Card		_
Orientation	Width 64	Height	32	÷ N	umber of	2	Number of	2	•
	Color								
Advanced Setting	Font		Module	Line		Receivi	ing Card Line		
	Background O	0	Backgrou	1	2		 From Left From Right 	-	

Note:

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 www.novastar.tech

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						
	×		ок	Ca	ncel	

Step 2 Click

Figure 10-4 Adding external programs

Add External Program	×
Program P	
Command	
ОК	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 87

	NovaLCT LED Configuration Tool for Multimedia Player User Manual
Note:	
Select an external program icon and click 区 to remove the program.	

Step 4 Click OK.



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 multimedia players

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	\times
Supported by V5.4.4 or later	
🔿 Save to hardware only	
○ Save to hardware and back up	
Remind me to back up after saving to hardware	
Save	

11.2 Cloud Server Configuration

Applications

Configure the cloud server address to VNNOX Care or a custom domain name. The custom domain can only be used to restore the configuration file from the cloud when setting up the screen and does not support other cloud-based functions.

Applicable Products

All receiving cards and sending cards.

Prerequisites

To configure the server address as a custom domain name, you need to have an available domain.

Related Information

None



Operating Procedure

Step 1 On the menu bar, choose **Settings** > **Server Configuration**.

Figure 11-2 Server configuration

Server Configuration		>
Select server address:		
VNNOX Care		
🔿 Custom domain name		
	OK	Cancel

- Step 2 Select VNNOX Care or select Custom domain name and enter you domain name.
- Step 3 Click **OK** once you are done.

Step 4 Restart the NovaLCT for the change to take effect.

11.3 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

 $Step 1 \quad \text{On the menu bar, choose Settings} > The Main Window Starting Position.}$

Figure 11-3 Setting starting position coordinates

Starting Position Se	tting	\times
X Coordinates	32	
Y Coordinates	35	
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.

11.4 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.

11.5 Obtain Help Information

Applications

Check the user manuals, update log and software information of the current version of NovaLCT, and contact online customer service.

Applicable Products

N/A

Prerequisites

None

Related Information

None

Operating Procedure

Choose Help from the menu bar and do the corresponding operations below as needed.

View User Manual

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.

Contact online customer service

Choose Online Support. On the displayed page, chat with the customer service online.



11.6 Update Software

11.6.1 Online Update

Applications

When the Internet is available, download the NovaLCT update package from the cloud and install it.

Applicable Products

N/A

Prerequisites

The control computer is connected to the Internet.

Related Information

None

Operating Procedure

Step 1 From the menu bar, choose Help > Online Update.

Notes

If NovaLCT is not up to date, after NovaLCT is opened, an "Online Update" dialog will be displayed.

If there is an available new version, an 😑 icon is displayed in front of the **Online Update** menu name.

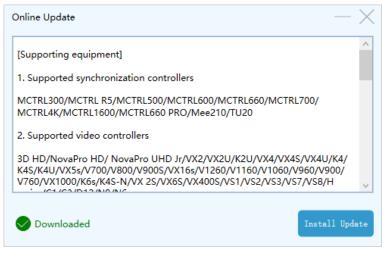
Figure 11-4 Online update

Online Update	$-\times$
A new version is available. Update ne	ow?
	ХО

Step 2 Click OK.

- Step 3 Click Get Update.
- Step 4 After the update package is downloaded, click Install Update and wait for it to complete.

Figure 11-5 Installing update



11.6.2 Local Update

Applications

When there is no Internet, upload the local NovaLCT update package from the local computer and install it.

Applicable Products

N/A

Prerequisites

The local update package is prepared.

Related Information

None

Operating Procedure

Step 1 From the menu bar, choose Help > Local Update.

Figure 11-6 Local update

Local Update			$-\times$
	Please select the	update package.	
	Flease select the	upuate package.	
	Select File	Update	

Step 2 Click Select File.

Step 3 In the displayed dialog box, select an update package and click Open.

Step 4 After the package is verified, click **Update** and wait for it to complete.



Figure 11-7 Installing update

Local Update —	\times
File Name:C:\Users\Nova001847\Desktop\NovaLCT_V5.4.4.3.zip	
Select File 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 screen 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.

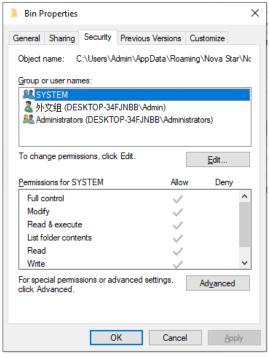


Solution

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



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

Permissions for Bin		×
Security		
Object name: C:\Users\Admin\	AppData\Roaming	g\Nova Star\Nc
Group or user names:		
SYSTEM		
▲ 外文组 (DESKTOP-34FJNBI		
Administrators (DESKTOP-34	FJNBB\Administra	tors)
	A <u>d</u> d	<u>R</u> emove
Permissions for SYSTEM	A <u>d</u> d Allow	<u>R</u> emove Deny
Permissions for SYSTEM	-	
	-	Deny
Full control	-	Deny
Full control Modify	-	
Full control Modify Read & execute	-	
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	×
Select this object type: Users, Groups, or Built-in security principals	<u>O</u> bject Types
From this location:	
DESKTOP-34FJNBB	Locations
Enter the object names to select (<u>examples</u>):	
	<u>C</u> heck Names
Advanced OK	Cancel

Step 8 Click Advanced to open the dialog box shown in Figure 12-5, and click Find Now.

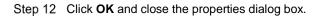
Figure	12-5	Advanced	settings
--------	------	----------	----------

J		-	
Select Users or Groups			×
Select this object type:			
Users, Groups, or Built-i	n security principals		Object Types
From this location:			
DESKTOP-34FJNBB			Locations
Common Queries			
N <u>a</u> me: Starts	with \sim		<u>C</u> olumns
Description: Starts	with \sim		Find <u>N</u> ow
Disabled account	s		Stop
Non expiring pass	word		
Days since last logor	r 🗸		<i>\$</i> 7
			1-1
Search results:			OK Cancel
Name	In Folder		^
Access Control Assi	DESKTOP-34FJ		
🛃 Admin	DESKTOP-34FJ		
Administrator	DESKTOP-34FJ		
Administrators	DESKTOP-34FJ		
ALL APPLICATION			
ANONYMOUS LO			
Authenticated Users			
Backup Operators			
BATCH	220.001 0110		~
illu .			

- 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.

Permissions for Bin)
Security		
Object name: C:\Users\Admir	n\AppData∖Roaming	g\Nova Star\Nc
Group or user names:		
Section 2010		
SYSTEM		
▲ 外文组 (DESKTOP-34FJNI		
Administrators (DESKTOP-3	34FJNBB\Administra	tors)
	A <u>d</u> d	<u>R</u> emove
Permissions for Everyone	A <u>d</u> d Allow	<u>R</u> emove Deny
Permissions for Everyone Full control	_	_
	Allow	 Deny
Full control	Allow	 Deny
Full control Modify	Allow	 Deny
Full control Modify Read & execute	Allow	 Deny
Full control Modify Read & execute List folder contents	Allow	 Deny
Full control Modify Read & execute List folder contents	Allow	 Deny

Figure 12-6 Setting permissions



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.



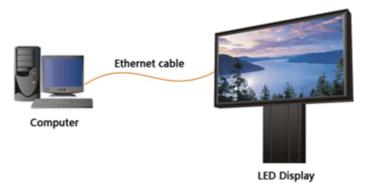
13 FAQs

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



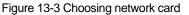
<u>Answer</u>

- 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.

Figure 13-2 Enabling virtual controller

🔡 Detect Config	<u> </u>		×
Auto Detect Config			
☑ Auto detect cont Detect Interval Config			
Detect interval: 3	10	ᅌ S	
Virtual Controller Cont	fi g ———		
🗹 Enable virtual o	controlle	r	
OK	Can	cel	

- Step 4 On the taskbar, right click 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 🏜 and choose System Setting.

System Setting		×
🗌 Enable Froxy	Test Froxy	
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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