

# Nova M3 LED Display Control System User Manual



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# **1** Introduction toNovaLCT-Mars

Nova M3 series LED screen control system, taking the software NovaLCT-Mars as operating platform, cooperating with data transmitter-receiver card, monitoring card and multifunctional card, realizes smart setting, brightness control, power control, light point supervision, screen calibration and hardware monitoring of LED screen, so the user can easily control all the key information of the screen in front of a computer to perfectly reveal your screen at any time. Nova M3 series control system has the important performances as follows:

- High grey scale and high refresh rate: universal chip, with high grey scale, high refresh rate and high performance;
- Point-by-point chroma correction: correct color of every lamp, eliminate chroma difference among batches of LEDs.
- Comprehensive status monitoring: supervising work status, temperature, humidity, smog, supply voltage of switch, fan rotating speed and single lamp open and short circuit of every cabinet.
- Infinite area load: unique cascade and synchronization technology, and huge stable and reliable load without black out, jitter or stutter;
- Perfect anomalous type support: arbitrary cabling, arbitrary point extraction, arbitrary point insertion, anomalous plate, anomalous cabinet, anomalous screen and easy load;
- Low grey scale with richness and smoothness: first-class build-up of luminance, and grey scale of 16bit, which makes the image of the screen fine and smooth;
- Green, energy saving, and environmental protection: low voltage, low power consumption, low radiation, and easily passing EMI/EMC;



- Overall chip supported: support TI, Toshiba, MBI, SITI, ENE, MY, Ri yue cheng, Microblock and other series of products, and supportTLC59282, TLC5929, TLC5944, DM13A, DM13H, P2510, SUM2016, SUM2017, MBI5020/5024/5034/5035/5042/5050/5152, SUM2032, MY9221/9262, RT5924, 16158, 5122, 5929, 5266, 5166and other IC;
- No sending board mode supported, being fit for small screen control.  $\triangleright$ ATAM NOVASTAR TECH CO.



# 1.1 Configuration list

Product name	Type/Version No.	Functions	Remarks
NovaLCT-Mars	V4.2.5	Operating platform	Standard configuration
	MSD300		Selectable
	/ MSD600		
Conding board	/MCTRL300	Transmitting data	
Sending board	/MCTRL500	Transmitting data	
	/MCTRL600		
	MCTRL610		O • 1
	MRV200/MRV210		Standard configuration
	MRV220/MRV300/	Being connected with the	
Receiving card	MRV320/MRV330	screen to deliver control	
	MRV340/MRV350	information to the screen	
	MRV360/MRV365		
	MON300	Monitoring the status of	Selectable
Monitoring card	NA	the hardware	
	MFN300	Monitoring temperature,	Selectable
Multifunctional		humidity and the light	
card			
		sensor	
	Photoelectric	Remote transmission	Selectable
A	converter		
Accessories	Light sensor	Detecting environmental	
		brightness	



# 1.2 System architecture

The system is under two situations: with sending board or no sending board; when it has no sending board, the computer is directly connected with the receiver card through the Ethernet cable.

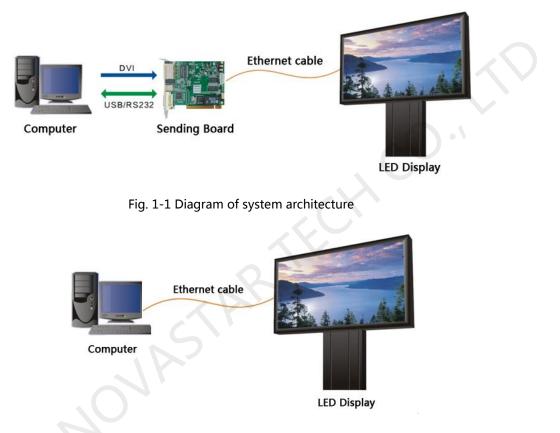


Fig.1-2 Diagram of system architecture with no Sending Board

# 2 Working environment requirements

In order to guarantee stability and safety during system operation process, the working environment is provided with the following advices:

### Hardware environment

Client (minimum configuration requirement): Celeron 1Gabove, and internal storage of 256Mor

above.

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#### Software environment

Client operating system: Win2000 PRO, 98, XP, win7 etc.

#### Network environment

The screen shall be connected with internet to perform on-line correction.

# 3 Installation of NovaLCT-Mars

The installation of NovaLCT-Mars is the same as other common software applications. One thing need to be mentioned is that if the installation process is blocked by any anti-virus or firewall application, please select the option that allows the installation operation to do what it needs to do. Because what is blocked is usually the installation or update operation of the serial ports driver.



# 4 Main Interface of NovaLCT-Mars

After running NovaLCT-Mars, Click "User"  $\rightarrow$  "Advanced Login", the User login window will

appears shown in Fig.4-1.

🖳 User Login	
_ *****	
Passw	
Login Cancel	

Fig. 4-1 Advanced Login

Input the initial password "admin" for first ,and then enter the NovaLCT-Mars main interface for

advanced users. Shown in Fig.4-2.

The main interface does not display monitoring data.

NovaLCT-Mars V4.2.5 S2 T2         -         -         ×								
System( <u>S)</u> Tools( <u>C</u> ) Plug-in Tool( <u>P</u> ) User( <u>U</u> ) Language(Lang)( <u>L</u> ) Help( <u>H</u> )								
Screen Config Brightness Calibration Display Control Monitor Function Card								
Local System Info								
Control System: 1 Other Device: Unknown <u>View Detail</u> Monitor Info								
Cabinet								
Server Status: Server Version:3.0								

Fig. 4-2 The main interface for advanced users

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# 4.1 Update password

User can modify the code after login, as shown in the following figure:

<u>ø</u>	No	ovaLCT-Mars V4.2.	5 S2 T2			- 🗆 🗙		
System(S) Tools(C)	Plug-in Tool(P) User	(U) Language(Lang)	(L) Help(H	)				
Change Password(U)								
		Logout(E)						
Escreen Config Brightn Local System Info	Screen Config Brightness Calibration Display Control Monitor Function Card							
Control System:	1 Other D	evice: 0	View	<u>Detail</u>				
Monitor Info								
	111	<i>谷</i>	Se !		<b>***</b>			
						•		
						•		
Server Status: Server Vers	sion:3.0					.:		
	🖳 Update Pass	swora			×			
	Original	I Pwd:						
	Ongina							
	New	/ Pwd:	-					
Confirm Pwd:								
OK Cancel								
					.41			
Fig. 4-3 Update Password								

# 4.2 Main Menu

System

### Reconnect

This is used to reconnecting the NovaLCT-Mars to the LED display control system.

- Tools
  - Screen Config

Only accessible by advanced users. This is used for configuration of the LED display control

system. Details about this operation will be given in a later part of this manual.

#### • Brightness

This is used for adjusting the LED display brightness. There are three ways for brightness adjustment, automatic brightness, manual brightness and schedule brightness. Details about brightness adjustment will be given in a later part of this manual.

### • Cabinet Database

Only accessible by advanced users. This is used for management of the existing cabinet libraries

(.mcl files) or creating new cabinet libraries.

## • Calibration

Only accessible by advanced users. Select this item to open the calibration page. Details about calibration will be given in a later part of this manual.

# • Display Control

- > Black out--- Show nothing on the LED display.
- > Lock --- Always show the current image frame of the LED display.
- **Run** --- Switch the LED display back to normal from Kill or Lock.
- Self Test --- show the test images generated by the receiver card for LED displays aging test or error detecting.

Monitor

This is used to open the page for system monitoring. Details will be given in a later part of this manual.

# • Function Card

This is used to open the page for multifunction card configuration. Details will be given in a later



part of this manual.

#### • Hardware Information

This is used to check the information about the current LED display control system.

#### • Multiple Screen Management

Only accessible by advanced users. This is used to open the page for combination display configuration. It makes the management of brightness control and monitoring of multiple LED displays easier when these LED displays are combined together. Details will be given in a later part of this manual.

#### • Error Dot Detect

This is used to open the page for Error Dot Detection (LED lights open/short circuit status checking).

#### • Prestore Picture

Enter the restore screen, booting screen and no signal (including the disconnected network cable and no DVI signal) screen settings can be conducted.

#### Color Restore

Gamut conversion.

#### • Light panel Flash

View correction coefficients of the receiving card and light panel;

Save correction coefficients in the receiving card and light panel;

Test whether Flash is normal.

#### • Receiving card relay

Set parameters for the receiving card relay;

Reset the time of the receiving card.

## • Multi batch of adjustment

Adjust the brightness of the display according to the batches of cabinet.

## • Load Configuration File

Add/Delete configuration files;

Modify file name ;

Save the configuration file in controller.

## • Dark or Bright line Adjustment for cabinet

Adjust dark or bright lines caused by box splicing, and recovery for cabinet.

- Plug-in Tool
  - **Test Tool** --- to open the page which all test tools (test content) for LED displays testing are in.
  - **Calculator** --- a shortcut to the calculator application of Microsoft Windows. Click on this item will open the Microsoft Windows calculator.
  - External Program --- a shortcut to add frequently used programs.
- User
  - Advanced Login---This is for user login. The initial password for advanced users is admin, after login , user can update the password.
  - Enter Demo mode--- The password is "admin", and user can experience a part of the

function of LCT without connection to the hardware.

# ■ Language

This is used to switch the language of the NovaLCT-Mars application. Languages available now



are simplified Chinese and English.

- Help
  - **Configure information management(M)**---Import/Export config.
  - Set initial position---Set the initial coordinates.
  - **About** ---to check the version information about the NovaLCT-Mars application.

# 4.3 Tool Bar



Screen Config --- the same as Tools->Screen Config in the main menu.



Brightness --- the same as Tools->Brightness in the main menu.



Calibration --- the same as **Tools**->**Calibration** in the main menu.



Display Control --- the same as Tools->Display Control in the main menu.



Monitor --- the same as **Tools**->Monitor in the main menu.



Function Card --- the same as **Tools**->**Function Card** in the main menu.

# 5 Main Functions of NovaLCT-Mars

When in the mode with no sending board, the control system software will have no sending

board operation page, all the parameter setting related to the sending board shall be omitted, and other operations are the same as having sending board.

# 5.1 Start the LED Displays

# 5.1.1 Start with System Configuration Files

The advantage of using system configuration files to configure LED displays is that the configuration procedure is very simple and easy, and no manual configuration operation is required.

To configure a LED display with system configuration files, click **Screen Config** button from the tool bar or select **Tools**->**Screen Config** from the main menu of the NovaLCT-Mars application main interface to open the Screen Config window. Shown in Fig.5-1 is the Screen Config window.

🖳 Screen Config	W. 20 1-	×
<ul> <li>Select communication</li> </ul>	port	
Current operation	СОМ5	•
	COM5 Realtek PCIe GBE Family Controller	Ľ
Confia Screen	<u></u>	
Load Config File		Browse
AN'	Next	Close

Fig. 5-1 The Screen Config window

# Step 1: Set the Current Operation Communication Port

This is the port that connects the sending board (controller) to be configured to the control computer. If only one serial port of the computer is used to connect the LED display control system, the used serial port will be automatically set as the current serial port. Otherwise, if multiple serial ports are used to connect control systems to the computer (one serial port for one

control system), the serial port that is used to connect the control system which is to be configured should be set as the current serial port.

If it's the mode with no sending board, please set the corresponding network port.

Step 2: Load system configuration file

Select Load Config File option, use Browse button to select the system configuration file to be

loaded and then click Next. The selected configuration file will be automatically loaded to the

LED display system. The LED display system will have been configured when the load operation is

finished.

#### Note :

The loaded performance parameters from the configuration file can be adjusted if they are not suitable. Please refer to <u>5.1.4 Adjust the Performance Parameters</u> for details about how to adjust the performance parameters.

# 5.1.2 Start Manually

# 5.1.2.1 Smart Setting

# > Step 1

Select **Config Screen** option in the Screen Config window (Fig.5-1), and click **Next** to open the

window for manual configuration of the LED displays. The window is as shown in Fig.5-2.



Screen Config-COM4	
Sending Board Scan Board Screen Connection	
Display Mode Current Display Mode Sending Board Resolution: 928 x 600 Graphics output resolution: 1440 x 900	Refresh
Set the sending board display mode Resolution: 640 × 480 p× Refresh Rate: 50 Hz	★ x 600 ↓ Set
Set 3D:       Config         Hot Backup Setting	
Master Device Slave I	Device
Master Sending Board Index Master Port Index Slave Sending Board Index	Slave Port Index
	Slave Port Index
	Slave Port Index Edit Delete
Board Index Master Port Index Board Index	
Board Index Board Index Board Index          Refresh       Send       Add         HDMI Cards Settings       Add         Auto Select       Video Input Selection:	
Board Index Master Port Index Board Index           Board Index         Board Index           Refresh         Send         Add           HDMI Cards Settings         Auto Select	

Fig. 5-2 The Screen Config window for manual configuration of the LED displays

	Note :
	Make sure the resolutions of the sending board (also named sending board) and the
d	computer video card are the same, otherwise the LED display may not be able to
en	work normally. Reset the video card resolution or change that of the sending board if
	their resolutions are not the same. Refer to 5.1.5 Adjust the Resolution and Refresh Rate for
	details about how to change the sending board resolution.



#### Step 2

Switch to the Scan Board page and click Smart Setting button to open the Smart Setting dialog.

Shown in Fig.5-3 is the **Smart Setting** dialog.

Note: (1).Pption 1, clic	k 'Next' to begi	n smart settir	uz!		
(2).Option 2 or 3,					
c, option 2 of 0,	road modale int	ormation st			
Option 1:Smart set <sup>i</sup>	ing				
🔘 Option 2: Load modu	ıle from file				
File Path:				Browse	• \
🔿 Option 3: Load modu	ile from databas:	e	Ţ		
Cabinet Database				Browse	
Path: Selected Module:			Select	Module	

Fig. 5-3 The Smart Setting dialog

Select Option 1: Smart setting and click Next to activate smart setting wizard. The Smart

Setting Step 1 window will appear, as shown in Fig.5-4.

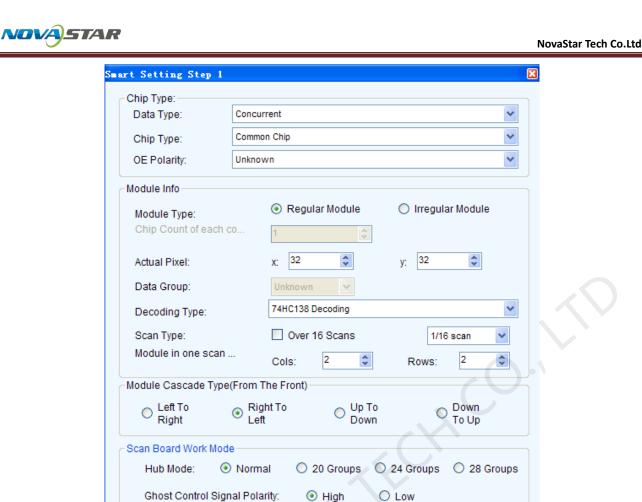


Fig. 5-4 Smart Setting Step 1

Next

Cancel

### Chip Type

Select the driver chip type from the list according to what is actually used for the cabinets.

#### **OE Polarity**

This option can be High Effective, Low Effective or Unknown.

#### Module type

The option can be regular module or irregular module. If it is set to be irregular module, the

counts of driver chips for one data set and one color should be given.

#### **Actual Pixel**

This is the size of the real pixel array of a module. X represents the width and Y the height.

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#### Decoding type

The options can be Static, 74HC138 Code , Decode595 , LXY695x , Straight Decoding.

#### Scan Type

The options could be any scan rate between 1 scan and 16 scan or **unknown**.

#### Rows and columns of the Module in one scan board (also named receiver card)

This is the size of the module array in the cabinet which is being configured by smart setting.

#### Module Cascade Type

Select the corresponding option according to the module connection routing. Note that the cabinet should be observed from the front when considering the cascade direction.

#### Working Mode of Receiving Card

Hub mode: Select the Hub mode of the receiving card, which could be divided into normal,

20 group, 24 group and 28 group.

> Afterglow control signal polarity: the polarity of the signal shall be selected according to

the design of the afterglow circuit.

#### Note :

1. If the module array size is set as the default (1 column, 1 row), the modules in the

- first rows of the module arrays of all cabinets will be lightened (LED lights on).
- 2. Or if the module array size is set as the real numbers, the last module of each first row of the module arrays of all cabinets will be lightened (LED lights on).

#### Step 3

đ

Click Next on the Smart Setting Step 1 window to access Smart Setting Step 2. Shown in



Fig.5-5 is the Smart Setting Step 2 window. Select All Black or Has Contents according to the

module status.

Smart Setting Step 2	X	
Current Module is:		
💿 Black	🔿 Showing	
	Next	
	g. 5-5 Smart Setting Step 2	
Note :		
This step will be skipped if	nodule polarity is known and set in Step 1.	

#### > Step 4

Click **Next** on the **Smart Setting Step 2** window to access **Smart Setting Step 3**. Shown in Fig.5-6 is the Smart Setting Step 3 window.

Select the color for each module statuses (**1**, **2**, **3** and **4**). For example, if the module shows green in statuses 2, choose **Green** in the corresponding com box. The software will switch the module statuses automatically if **Auto switch status** is selected. Select **Manual switch status** to switch the module statuses manually.

NOVASTAR				NovaStar Tech Co.Ltd
	Smart S	etting Step 3	X	
	💿 Au	to switch status 🔷 🔘 Manual switch status		
	Please	choose the module color in each status:		
	01	Red A	~	
	0 2	Green	~	
	<b>⊙</b> 3	Blue	~	
	04	Red B Or Black	~	
		Next		

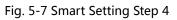
Fig. 5-6 Smart Setting Step 3

### > Step 5

Click Next on the Smart Setting Step 3 window to access Smart Setting Step 4. Shown in

Fig.5-7 is the Smart Setting Step 4 window.

Enter the number of LED light rows that are on in a module.



# > Step 6

Click Next on the Smart Setting Step 4 window to access Smart Setting Step 5. Shown in

Fig.5-8 is the Smart Setting Step 5 window.

Enter the number of LED light columns that are on in a module.

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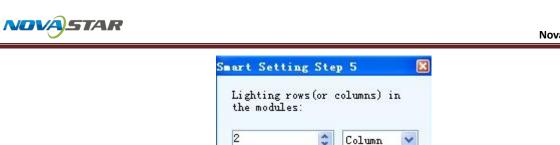


Fig. 5-8 Smart Setting Step 5

Cancel

Next

#### > Step 7

Click **Next** on the **Smart Setting Step 5** window to access **Smart Setting Step 6**. Shown in Fig.5-9 is the Smart Setting Step 6 window.

Use **Auto Switch Status** or **Manual Switch Status** to switch the module status automatically or manually. And then select the option corresponding to the module statuses (**1** or **2**) under which all lights are on. If all lights are on under both statuses, then any of the two options (**1** and **2**) will be OK.

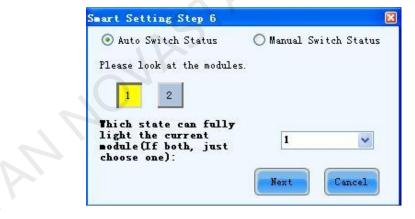


Fig. 5-9 Smart Setting Step 6

#### > Step 8

Click Next on the Smart Setting Step 6 window to access Smart Setting Step 9. Shown in

Fig.5-10 is the Smart Setting Step 9 window.

Click the corresponding grids according to the position of the lightened lights until no light is

lightened any more. A line of the lightened lights routing will be drawn at the same time. A



message indicating the finish of the Smart Setting Step 9 will be shown when enough lights

have been processed.

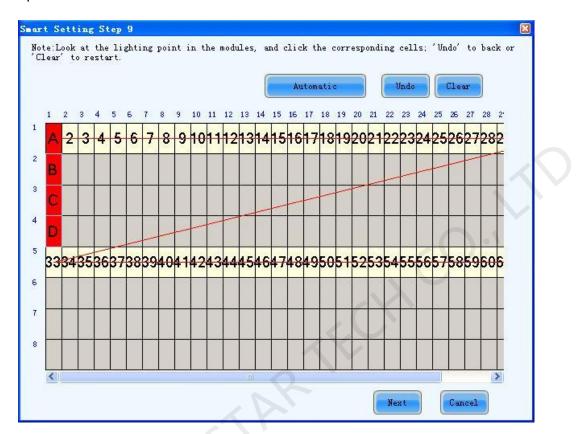


Fig. 5-10 Smart Setting Step 9

### Note :

Hold the left button of the mouse and drag, or use Tab and Enter to draw the routing

line. Use Automatic button to accomplish drawing routing lines of the same pattern.

#### > Step 9

d١

Click **Next** on the Smart Setting Step 9 window to open the Save Module dialog which is for saving the settings set for the module through all the smart setting steps. The Save Module dialog is shown in Fig.5-11. Saving the module settings to files (module configuration files or cabinet database files)will make it easier to perform module configuration for another LED displays constructed by modules which require the same settings as the one just set (Choose Option2 or 3 in the Smart Setting dialog (Fig.5-3) in Step 2, select corresponding files and modules and smart setting is done.). Click **Finish** to finish smart setting after saving the settings. Click **Finish** directly if you don' t want to save the settings.

Note: You can save module to f	file or cabinet database for later using.	
Module Name:	nie of capinet database for fater dsing.	
Option 1: Save module to	, file	
File Path:		Browse
🔿 Option 2: Save module to	database	
	Change Database	View
Cabinet Database Path:		1.000

Fig. 5-11 The Save Module dialog

	Note :
ag	The saved module settings can be used in Step 2 of Smart Setting to simplify smart
	setting process.

# 5.1.2.2 LED Display Configuration

Select Screen Configuration page in the Screen Config window (Fig.5-2).

If no LED display has been configured, the Screen Configuration page will be as shown in Fig.5-12.

Enter screen number (number of the LED displays to be configured) and click **Config** button. The

default screen configuration page (page for simple LED display configuration) will open.

The configuration information will be shown on the Screen Configuration page if a LED display

has been configured. Modify the settings and send them to hardware (by clicking Send To HW

button) if necessary.





Fig. 5-12 The Screen Configuration page with no LED display configuration information

#### **Screen Number**

This is the number of LED displays that are to be configured.

#### Config

This button is used to load the Screen Number to the NovaLCT-Mars application.

### **Read form HW**

This is used for the application to read the LED display information from the hardware.

#### **Detect Status**

This is used to check whether the communication within the current LED display is good.

#### **Read File**

This is used for the application to load the LED display configuration settings from a file.



#### Save File

This is used to save the LED display configuration settings to a .scr file.

#### Send to HW

This is used to send the LED display configuration settings to the connected sending board.

#### Save

This is used to save the settings to a FLASH chip. The saved data won' t be lost even the hardware is powered off.

#### Screen Type

There are three options for the screen type, which are simple screen, standard screen and complex screen. These options will be shown at the top of each screen page on the Screen Configuration page. Choose a screen type before any configuration operation. Configurations for different type of screen will be given as follow.

#### Simple Screen Configuration

The page for simple screen configuration is shown in Fig.5-13.



🖳 Screen Config-COM3				
Sending Board Scan Board Screen Connection				
Screen N 3  Config				
Screen Type:  Simple Screen  Standard Screen  Complex Screen Note:One sending board for screen, every scan board must have same loading!				
Basic Information Location: X: 0 Y: 0 Virtual M Enable				
Connection Setting   Scan Bo. Colum   8   Scan Bo. Width:   128   Pixel   Sending#:   1   Connecting Mode   Horizontal:   Image: I				
Detect Status         Read File         Save File         Read from HW         Send To HW				
Factory Restore Save Config File Save Close				

Fig. 5-13 Simple screen configuration page

#### Location

DVA)STAR

This is the upper-left corner of a rectangular area of the computer display. The rectangle area of the computer display is called mapping area. Content inside the mapping area will be shown on the LED display. The default location is (0,0), which is actually the upper-left corner of the computer display.

#### Virtual Mode

Specify the pixel mode of the LED display. The option could be real pixel or virtual 3 lights or virtual 4 lights.

Select the **Start** to launch the virtual mode, click **I** to enter into the setting interface of the

virtual mode. Select the layout type of the lights on the top right corner of the window, and drag

the mouse on the left side of the window to change the arrangement of the lights.

For example, if the Erected Triangle Interaction is selected, the changed positions are as follows:

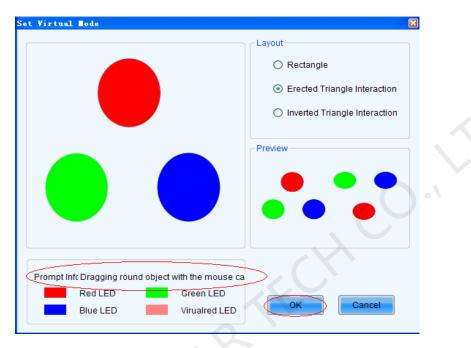


Fig. 5-14 Positions of the virtual lights before change

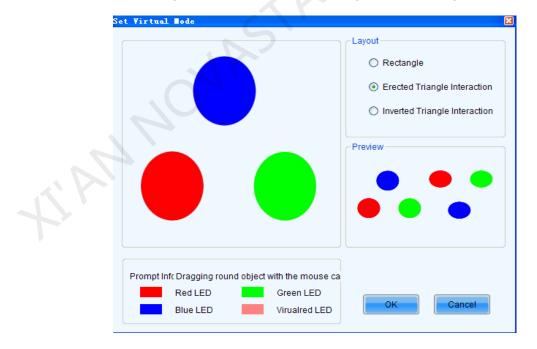


Fig. 5-15 Positions of the virtual lights after change



#### **3D Enable**

Select this item, System will support the 3D products.

#### Scan Board Columns/Rows

These are the numbers of columns and rows of the scan boards (receiver cards) array of the LED

display.

#### Scan Board Width/Height

These two parameters in the Scan Board Info panel refer to the width and height of the pixel array driven by a scan board (receiver card). They must be set the same as those set in the Scan Board page.

#### Sending

This parameter is used to specify the current sending board (sending Card). The sending board of the chosen index is will be set as the current sending board. And all relating settings are for this sending board.

#### **Connecting Mode**

Select the connecting mode of cable.

#### Port 1 Loaded

Set the number of scan boards that port 1 loaded.

#### Advance

If the connecting mode of each port is different, click the link to enter advance mode.

#### > Standard Screen Configuration

The page for standard screen configuration is shown in Fig.5-16.

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🖳 Screen Config-COM3				
Sending Board Scan Board Screen Connection				
Screen1 Screen2 Screen3	Screen N 3			
Screen Type: O Simple Screen O Standard Screen O Complex Screen				
Location: X: 0 Y: 0	Virtual Mode: 📄 Enable			
The current network port operations Sending Board Index	Scan Board Columns: 3 Scan Board Rows: 2 ResetAll Hide Line			
	1         2         3           Sending#:1         Sending#:1         Sending#:1           Port:1         Port:1         Port:1			
Port Index	1     Scan Bq <del>.:3     Ocan Bo.:2     Scan ES       Width:1     18     Width:128     Width:128       Height:128     Height:128     Height:128       Sending#:1     Sending#:1     Sending#:1  </del>			
Connect to d	Port1     Port1     Port1       2     Scan B0::4     Scan B0::5     Scan E16       Width:128     Width:128     Width:128       Height:128     Height:128     Height:128			
Scan Board Size Width: 128				
Set Blank Apply to port				
	Note:Click or drag left mouse button to config screen, right			
Detect Status Read File Save File Read from HW Send To HW				
Factory Restore	Save Config File Save Close			

Fig. 5-16 Standard screen configuration page

### Location

This is the upper-left corner of a rectangular area of the computer display. The rectangle area of the computer display is called mapping area. Content inside the mapping area will be shown on the LED display. The default location is (0,0), which is actually the upper-left corner of the computer display.

#### Virtual Mode

Specify the pixel mode of the LED display. The option could be real pixel or virtual 3 lights or virtual 4 lights.

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#### Scan Board Columns/Rows

These are the numbers of columns and rows of the scan board (receiver card) array of the LED display. A sketch map of the scan board array will be shown in this page after these two parameters are set.

#### Reset All

This button is used to reset all cabinet settings and connection settings.

#### Sending Board Index

This parameter is used to specify the current sending board (sending board). The sending board of the chosen index is will be set as the current sending board. And all relating settings are for this sending board.

#### Port Index

This is to specify which Ethernet port of the current sending board will be used for data output.

**Connect to deconcentrator**: If the system is connected with deconcentrator, tick this option to configure the deconcentrator internet access.

When deconcentrator is connected, tick "Connect to deconcentrator" on the software screen, and then click "Config" to popup the window for configuration of deconcentrator internet access, as shown below:



Screen Config-     Sending Board Scan Board Screen Connection     Screen1	80	Screen N 1 V Config
Screen Type: O Simple Screen Basic Information Location: X: 0 Y: 0	Standard Screen     Complex Screen     Virtual Mo    Enable	
	Scan Board 4 Scan Board 4 Reset Columns: 4 Rows: 4 Reset 1 2 3 Sendina# Sendina# Sendina Sending Board Index 5 Sending Board Index 1 2 3 4 5 6 7 8 9 1 Sending card internet access: 1 2 4 Internet access model: None One Two 5	4       Sending#:       Port:       Internet access       of       deconcentrator:       Sending#:       Port:       Internet access       of       deconcentrator:       Sending#:       Port:       Internet access       of       deconcentrator:       Sending#:       Port:       Internet access       of       Internet access       of
Back Clear Port Scan Board Size Width: 128	Cancel Ok Cancel Read File	Save File Read from HW Send To HW

Fig. 5-17 Configuration of deconcentrator internet access

Set the number of sending card, number of sending card internet access and the internet access model respectively.

None: directly connect the on-load or off-load receiving card;

One split to eight: One port of sending board connect to input port of deconcentrator(port A),

and split to eight ports.

VOVA)STAR

Two split to four: Two ports of sending board connect to input ports of deconcentrator(port A

and port B), and split to eight ports(each port split to four).

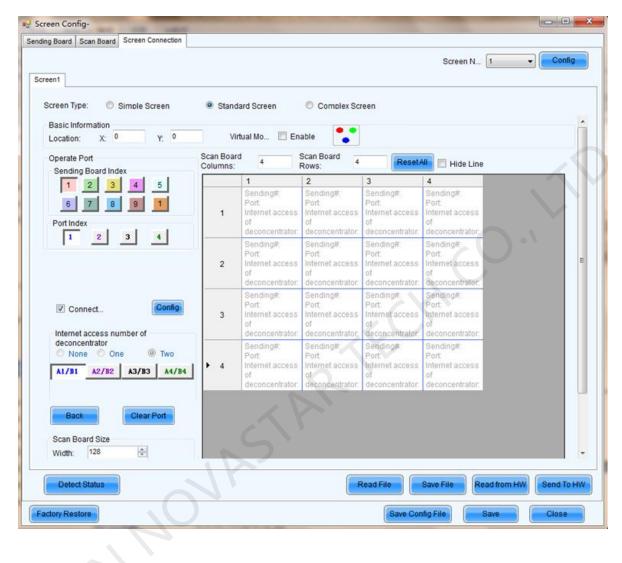
Example 1: Port 1 and Port 2 of sending board 1 are set as" two"; then internet access model of

port 1 and port 2 of sending board 1 shall be set as " two ". After the setup is finished, it shall be



like the following figure, port 1 corresponds to: A1, A2, A3 and A4; and port 2 corresponds to B1,

B2, B3 and B4.



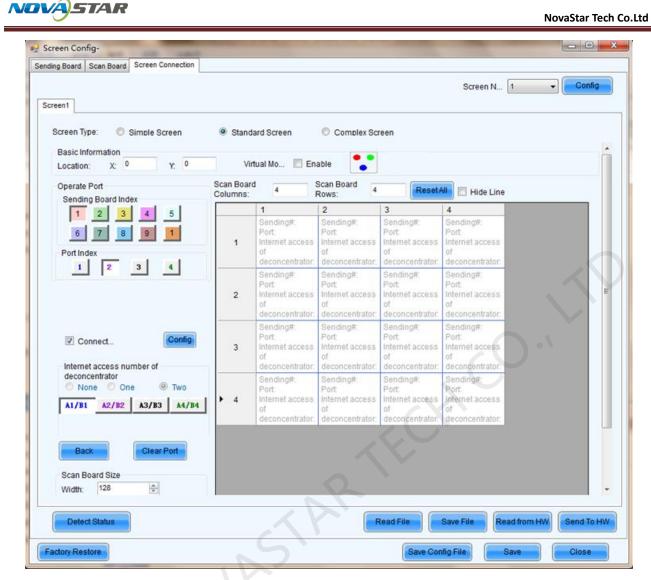
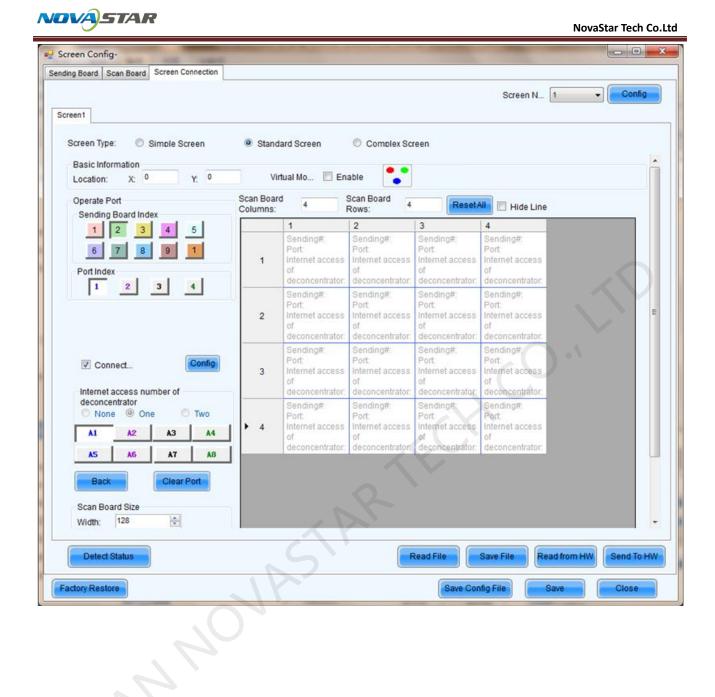


Fig. 5-18 Example 1 Configuration of internet access

Example 2: Internet access 1 of sending board 2 is set as "one ", and port 2 is directly connected with scan board. The internet access model of port 1 of sending board 2 is set as "one " and the internet access model of port 2 is set as "None".



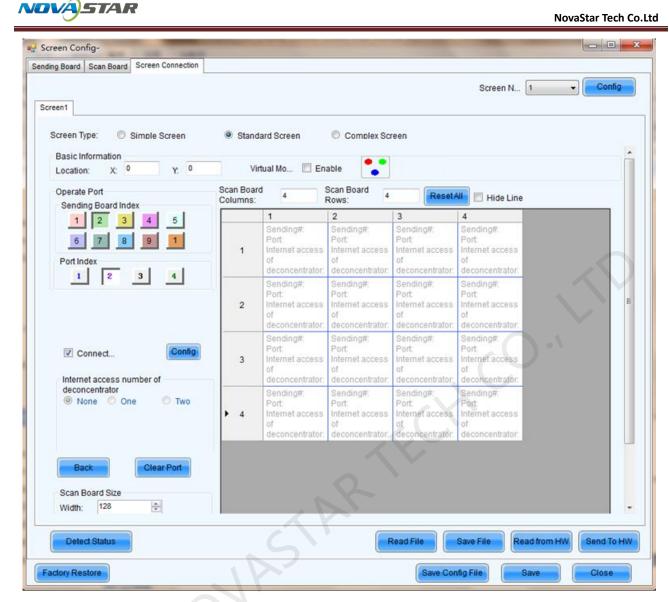
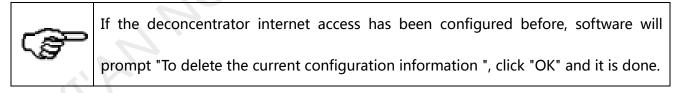


Fig. 5-19 Example 2 Configuration of internet access



#### Back

This button is used to clear all settings related to the last set sending board.

#### **Clear Port**

This button is used to clear all settings related to the current Ethernet port.

#### Width/Height (Scan Board Size)

These are the width and height of the pixel array of the current receiver card.



#### Apply to port

Click this button to set the pixel array sizes of all receiver cards connected to the current Ethernet port the same as that of the current receiver card.

#### Set Blank

Select this if the current position (pixel array of the current receiver card) needs to be left unset. The configuration operation is easy. First, if the deconcentrator is not connected , set the index as 1 for the receiver card (scan board) directly connected to a sending board through an Ethernet port, if the deconcentrator is connected, define the receiving card connected with the A1 internet access of the deconcentrator as the first one, and input values for other parameters. And then set the index as 2 for the receiver card which is connected to the first (index 1) receiver card and also input values for other parameter for the No.2 receiver card. Do the same configuration operation until all receiver cards are set. The configuration is completed by then. The pixel array sizes of the receiver cards can be different from each other, select and then the pixel can be changed. and can also be left unset. After configuration , click corresponding button to send the configuration information to the sending board or save it in the computer.

Note :

For different sending boards, the background colors of the grids are different.

For different Ethernet ports, the font colors are different.

The right button of the mouse can be used to clear the settings for the current sending board.

#### Complex Screen Configuration

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The page for complex screen configuration is shown in Fig.5-20.

	Config-COII	9 Screen Connection					
		_			S	creen N 1	✓ Config
creen1							
Screen	n Type: 🔘 Si	mple Screen	Standard \$	Creen ()	Complex Screen		
	Board Setting	Indie Ocreen	O blandard (		Joinblex Screen		
	Sending#	Port	Scan Bo.	Start X	Start Y	Width	Height
Þ	1	1	3	500	0	128	128
	1	1	2	628	0	128	128
	1	1	1	756	0	128	128
	1	1	4	500	128	128	128
	1	1	5	628	128	128	128
	1	1	6	756	128	128	128
Virtu	al M 🗌 Enabl	e <b>•••</b> (	🔄 3D E	2	Add	Edit	Delete
	etect Status		5	Read Fil	e Save Fil	e Read fr	rom HW Send To HW
	J						

Fig. 5-20 Complex screen configuration page

#### Add

Click **Add** to access the window for receiver cards information setting, such as index of its host sending board, Ethernet output ports, mapping areas, pixel array sizes and so on. The setting will be shown in the list.

#### Edit

To edit the information that has been set for receiver cards.

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#### Delete

To delete the selected receiver card from the receiver cards list.

#### Clear

To delete all receiver cards from the list.

# 5.1.3 Set the Cabinet Info

Select Scan Board page in the Screen Config window (Fig.5-2). Shown in Fig.5-21 is the Scan

Board page.

😸 Screen Config-COI19	
Sending Board Screen Connection	
Module Info	
Chip: Common C Size: 32W×32H Scan Type: 1/16 scan	>>
Direction: Horizontal Decode Type: 74HC138 Decoding Data Group: 2	
Cabinet Info	
1	
Regular O Irregular	
Pixel Width: 90 = <=96 Please Width: ?? Height: ??	Please
Pixel Height: 32 Calculate adjust berror	make sure 📃 the width
Module Casc Right to Left and height Construct View Cabinet	and height
Performance Setting	
Group Swap More Setting	
Refresh Rate: 240 Hz Accelerate R 4	
Gray Scale: Normal 16384 V Gray Mode: Gray First V	
Data Clock: 12.5 V MHz Data Duty: 50 V (25~75) %	
Clock Phase: 3 V Low Gray Co 1	
Blanking Time: 25 (=2.00us) Gnost Contro 20 (1~24)	
Line Change T 3 (0~19)	
Brightness Effi 52.31% Min OE: 24 ns	
Smart Setting Load File Save File Read From HW Se	end To HW
Save Config File	Close

Fig. 5-21 The Scan Board page

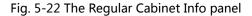
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## **Cabinet Info**

Pixel array size and module cascade direction can be set in this panel. Note that the Regular panel is for regular cabinets parameters setting and the Irregular panel is for irregular cabinets parameters setting. Shown in Fig.5-22 is the Regular Cabinet Info panel which is circled and marked as area 1 in Fig.5-21.

Regular			_	_
Pixel Width:	90	*	<+96	>
Pixel Height:	32	*	<=256	>
Module Casc	Right to	Left		~



#### Width/Height

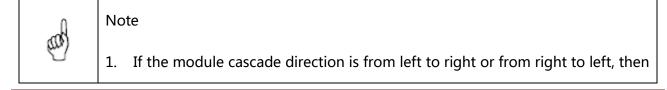
These two items specify the width and height of the cabinet pixel array. Note that the two numbers circled in Fig.5-22 are the maximum values that can be set, which is also named as Maximum Width and Maximum Height.

#### Maximum Width

Maximum width varies with parameters of refresh rate, gray scale levels, and shift clock frequency. Normally, the higher the refresh rate is and the finer the gray scale levels are, the smaller the maximum width will be; while the higher the shift clock frequency is, the larger the maximum width can be. But as the shift clock frequency is limited by driver chips and module design, the maximum width is also limited.

#### **Maximum Height**

The Maximum Height depends on the module design.





		as mentioned above, the Maximum Width depend	ls on the parameters such
		as refresh rate, gray scale levels and shift clock free	quency, and the Maximum
		Height depends on the module design.	
2	2.	If the module cascade direction is from top to botto	om or from bottom to top,
		then, factors affect the Maximum Width and Heig	ght are just switched. The
		Maximum Height depends on the parameters such	as refresh rate, gray scale
		levels and shift clock frequency, and the Maximu	m Width depends on the
		module design.	· O · '

# 5.1.4 Adjust the Performance Parameters

To achieve the best performance, performance parameters should be set properly. Performance parameters setting can be through the performance setting panel.

Shown in Fig.5-23 is the Performance Setting panel which is circled and marked as area 2 in

Fig	.5-21	•

Group Swap	More Setting				
Refresh Rate:	240	Hz	Accelerate R	4 🗸	
Gray Scale:	Normal 16384 💌		Gray Mode:	Gray First	
Data Clock:	12.5 💌	MHz	Data Duty:	50 🗸	(25~75) %
Clock Phase:	3 🗸		Low Gray Co	1	
Blanking Time:	25	(=2.00us)	Ghost Contro	20	(1~24)
Line Change T	3	(0~19)			
Brightness Effi	52.31%		Min OE:	24 ns	
Smart Setting			Load File	Save File F	Read From HW Send To HW

Fig. 5-23 The Performance Setting panel

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Clear Afterglow: Some of chips are supporting the functions of eliminating afterglow, and the

software defaults to be ticked.

ending Board	Scan Bo	oard Screen C	onnection							
Module Info										
Chip:	S	UM2017	Size:		32W×32H		Scan Type:	1/16 scan		>>
Direction:	н	lorizontal	Decode	Туре:	74HC138 De	coding	Data Group:	2		
Cabinet Info										
Regular	r				0	Irregular				
Pixel Wi	idth:	128 🌲	<=128	Pleas make s		Width:	?? Heiah		Please	
Pixel He	eiaht:	256 🚔	<=256	the wid	dth	Loading	error. Please adi	ust perform	make sure the width	
Module	Casc	Right to Left		and he	ight 🚽	Constr	uct V	iew Cabinet	and height	-
Performanc		More Setti	ng	(	ClearAfterglow	, ]			$\bigcirc$	
	Swap		ng • Hz		Clear Afterglow		•		9.	
Group	Swap	More Setti				۲ 4	▼ sh Rate First ▼		9	
Group S Refresh R	Swap Rate: e:	More Setti			Accelerate F	۲ 4	▼ sh Rate First ▼	(25~75) %	9	,1
Group S Refresh R Gray Scale	Swap Rate: e: k:	480 Normal 4096	▼ Hz		Accelerate F Gray Mode:	Refree 50		(25~75) %	9	
Group S Refresh R Gray Scale Data Clock	Swap Rate: e: k: ase:	More Setti           480           Normal 4096           12.5	<ul> <li>Hz</li> <li>MHz</li> </ul>		Accelerate F Gray Mode: Data Duty:	Refree 50 0 0		(25~75) % (1~24)	9	
Group S Refresh R Gray Scale Data Clock Clock Pha	Swap Rate: e: k: k: ase: Time:	More Setti           480           Normal 4096           12.5           2	<ul> <li>Hz</li> <li>MHz</li> </ul>	00us)	Accelerate F Gray Mode: Data Duty: Low Gray C	Refres	·		9	

**Data group exchange:** adjust the order of the data groups; click **Group Swap** to compare with

the original arrangement sequence of the screen.



Data Group Swap		x
📃 Enable Data Gr	Please Select The Operation	•
Serial Number	Data Group Sequence	Â
▶ 1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	≡
8	8	
9	9	
10	10	
11	11	
12	12	
13	13	
14	14	
15	15	_
40		-
Smart Find	Apply	cel

Fig. 5-25 Data group exchange

More settings:

Symmetrical/Data Group Extension
Output Mode Symmetrical Output Three Doors Output Four Doors Output Data Group Extension Twenty Data Grou Twenty Four Data Twenty Four Data D signal is taken as the second way clock to Ghost Control Signal Signal Switch: Open Close
Signal Polarity:   High   Low
Normal     O 20 Gourps
24 Groups
Graphics Output
Scan Direction Reverse Sca
OK

Fig. 5-26 More settings

# > Output Mode

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# • Symmetrical Output

If selected, the two 50pin output ports of a scan board will work for the left and the right half of the cabinet pixel array respectively.

- **Three doors output:** being optional, and after being selected, the loaded box will be divided into three parts from left to right.
- Four doors output: being optional, and after being selected, the loaded box will be divided into four parts from left to right.
- MOM Topology
- Fig.5-27 is the physical connection schematic diagram of Flash. According to that diagram, the sequence number of BUS is determinedly selector. Users shall consult HUB board designer for connection of the flash module to confirm the sequence number of BUS. One BUS can be cascaded with multiple modules. The MOM Topology can be set on the software according to the actual order of connection.

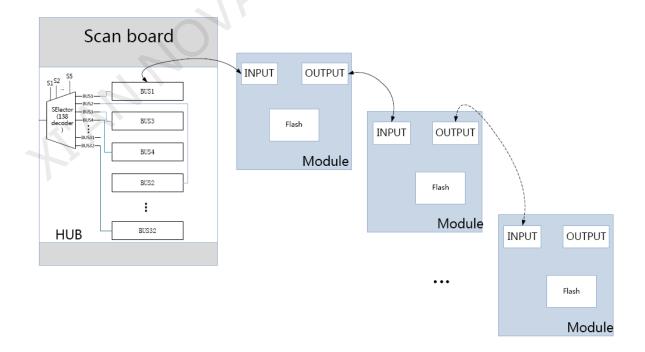


Fig. 5-27 Physical connection schematic diagram of Flash

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the size set currently.

As shown in Fig. 5-28, to set MOM Topology on the software, firstly set FLASH row and column numbers ,and then click anywhere on the right side of the window, select the corresponding BUS, and based on the actual route, click the left button of the mouse or press the arrow key to set each piece of Flash information according to the order (control size and coordinates).

Select a BUS and set Flash control size, and then click "Apply to current BUS"; the size of Flash with BUS connection will be modified as the current value.

After Flash Control Size is set, click "Reset All", and then all Flash Control Sizes will be reset as

OM Physical Setting	-		-			L.	
Flash Cols: 4	Flash F	Rows: 4				Back	ResetAll
BUS		1	2	3	4		
1 2 3 4 5 6 7 8	1	BUS:1 Number:3 Width:32	BUS:1 Number:2 Width:32	BUS:1 Number:1 Width:32	BUS:1 Number:0 Width.52		
9 10 11 12		Height:16	Height:16	Height:16	Height:16		
	2	BUS:2 Number:0 Width.32	BUS:2 Number:1 Width:32	BUS:2 Number:2 Width:32	BUS:2 Number:3 Width:52		
		Height:16	Height:16	Height:16	Height:16		
<u>17</u> <u>18</u> <u>19</u> <u>20</u>		BUS:3 Number:3	BUS:3 Number:2	BUS:3 Number:1	BUS:3 Number:0		
21 22 23 24	3	Width: 82 Height 16	Width:32 Height:16	Width:32 Height:16	Width.32 Height:16		
25         26         27         28           29         30         31         32		BUS:3 Number:4	BUS:3 Number:5	BUS:3 Number:6	BUS:3 Number:7		
	4	Width:32 Height:16	Width:32 Height:16	Width:32 Height:16	Width.52 Height:16		
Flash Control Size Width: 32							
Height: 16							
Apply to BUS							
Start X: 96							
Start Y: 48							
Note:Click or drag ]	left mouse	button	to config	screen,	right	Submit	Cancel

Fig. 5-28 MOM Physical Setting

#### > Data Group Extension

# • Twenty data group mode

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If selected, the scan board will provide 20 sets of output data for the cabinet. This mode and **D clock as the second road extended to 32** sets of data can't be selected at the same time.

# • Twenty Four data group mode

If selected, the scan board will provide 24 sets of output data for the cabinet. This mode and **D clock as the second road extended to 32** sets of data can't be selected at the same time.

# • Twenty Eight data group mode

If selected, the scan board will provide 28 sets of output data for the cabinet. This mode and **D clock as the second road extended to 32** sets of data can't be selected at the same time.

# • D clock as the second road extended to 32 sets of data

If selected, the scan board will provide 32 sets of output data for the cabinet. This mode and **Twenty Data Group Mode** can't be selected at the same time.

# Ghost Control Signal

- **Signal Switch** : the On or Off could be selected;
- **Signal Polarity :** the polarity of the signal could be selected according to the design of the afterglow circuit;
- > Hub Mode: select the Hub mode of the receiving card, which could be divided into normal,

20 groups, 24 groups or 28 groups.

> **Graphics Output:** the output in the scanning direction or the output in the reverse direction

could be selected.

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**Monitoring Card Data Line Adjustment:** If the monitoring corresponding signals are mismatched when the monitoring card HUB is connected to the receiving card, the corresponding signal of each monitoring data line can be adjusted manually.

	Enable Adjustment o	f Monitoring Data Line	_	
		Transfer Data Line Sig	nal	
•	Data Line 1	Red	~	
	Data Line2	Green	~	
	Data Line 3	Blue	~	
	Data Line 4	Vitual Red	~	
		OK Cancel		

Fig. 5-29 Monitoring Card Data line Adjustment

Additional Function : eliminate the afterglow of the insolated points, and shut down the indicators of the receiving card, Shorten the synchronization time, Brightness slowly brighten,

Additional Function	×
Isolated Point Afterglow Indicator Light of Rec Shorten the synchroni Brightness slowly brig	Clear Close Open Enable
EMC Function:	Cancel

Fig. 5-30 Additional Function

# **Refresh Rate**

This is the rate that images shown on a LED display are update. The higher the refresh rate is, the

more stable the video is for watching.

#### **Gray Scale**

Normally, 256 levels of gray scale is enough for two-color LED displays, 4096 levels enough for indoor full color LED displays, and 16384 levels enough for outdoor full color LED displays. And apparently, the more levels the gray scale is divided into, the more exquisite the shown images will be.

#### Gray Mode

There are four options for Gray Mode, Brightness First, Refresh Rate First ,Gray Firsthand Performance balance.

Brightness First: Brightness First mode is for normal use and it has lower brightness loss.

**Refresh Rate First** : image refresh rate can be greatly increased, but the cost is 8% of brightness loss.

**Gray First** : Gray First mode will cost 50% brightness to get a better gray when display with low bright.

**Performance balance** : Balance between gray scale and refreshing, and promote refresh rate of low gray level.

# Accelerate Rate

This parameter is used to increase the refresh rate. If N is selected, the refresh rate will be increased by N times.

#### Data Clock

This is the shift clock frequency. The shift clock frequency depends on the performance of driver

chips and the circuit design of the modules. The higher the driver chip performance is and the

better the module circuit is designed, the higher the shift clock frequency can be. A higher shift clock frequency will results in a larger pixel array, more gray levels or higher refresh rate that a receiver card can support.

#### Data Duty

This is the duty cycle for the shift clock. The shift clock frequency can be increased by changing this parameter. Normally, the duty cycle should be set as 50%.

#### Data Phase

By phase here refers to the time relation between the shift clock and the corresponding data to be shifted. This parameter can be used to eliminate the errors due to the phase, such as image dislocation and flashing pixels.

#### Low Gray Compensation

For driver chips that cannot respond to narrow pulse signals, the Low Gray Compensation parameter can be used to improve the image quality of low gray levels.

#### **Blanking Time**

This is the line blanking interval. This parameter can be used to weaken the decoy. Increase the value of this parameter if decoy is serious.

#### **Ghost Control**

This refers to the time to end the process for weakening decoy. It is used in conjunction with

Blanking Time and Line Change Time to weaken the decoy.

#### Line Change Time

This parameter refers to the time to switch to the next row. It is used in conjunction with Blanking

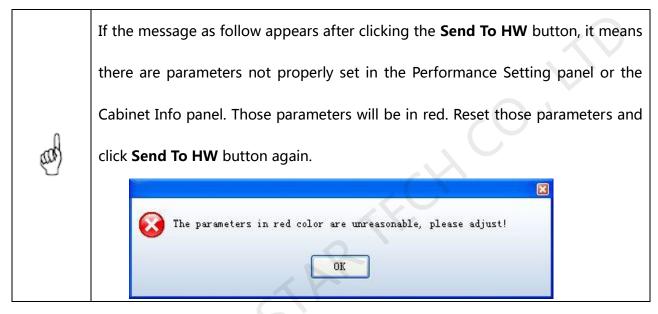
Time to weaken the decoy of scan mode LED displays.

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#### The steps of performance parameters adjustment are as follow.

#### > Step 1

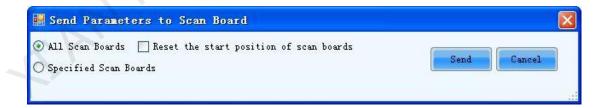
Adjust the parameters in the Performance Setting panel (Fig.5-23) until the Maximum Width and Height shown in the Cabinet Info panel (Fig.5-22) are larger than the pixel array size of the cabinet. Then click the **Send To HW** button on Fig.5-21.



#### > Step 2

If all parameter settings are acceptable, the dialog as shown in Fig.5-31 will appear after clicking

the Send To HW button.



#### Fig. 5-31 The dialog for specifying receiver cards to send the parameter settings to

#### All Scan Boards

When this option is selected, parameter settings will be sent to all receiver cards (scan boards)

that are connected to the current serial port through the sending boards that are connected with

the current serial port.

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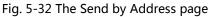
#### **Reset the start position of scan boards**

This option is available when **All Scan Boards** is selected. When this option is checked, start positions of all relating receiver cards (receiver cards that are connected to the current serial port through the sending boards that are connected with the current serial port.) will be set as (0,0). Thus all relating receiver cards will show (on their pixel arrays) the upper left corner image of the computer display.

#### **Specified Scan Boards**

This option is for sending parameter settings to specific receiver cards. There are two ways for sending parameter settings to specific receiver cards,by address and by sketch map. Corresponding pages are shown in Fig.5-32 and Fig.5-33.

Sending#	Port	Scan Bo.
<ol> <li>If the posit the first send</li> <li>If the posit the first port</li> </ol>	from 1,'*' means 'all'. ion of scan board is:1-*-*, it means of ing board; ion of scan board is:1-1-*, it means of in the first sending board; ion of scan board is:1-1-1, it means	all the scan boards of



Shown in Fig.5-32 is the Send by Address page. The Sending#, Port and Scan Bo are used to



specify the receiver cards to which the settings will be sent. Set these three parameters according

to the instructions given at the lower half of the page.

)Specified S						Send	Cancel	
S <mark>end By Addre</mark> Select Screen	Screen:1	in Sana A	on:X=100	. ¥=100	Size:256 <b>V</b> ×	128日		
V Screen1	O Screen				ogy Or List		Area On Sc	
	(1, 1)	(1,2)	(1,3)	(1,4)			Zoom:	K
	(2, 1)	(2, 2)	(2, 3)	(2, 4)				

Fig. 5-33 The Send by Topology page

Shown in Fig.5-33 is the Send by Topology page. The sketch of the receiver cards layout is show in this page. Select the receive cards from the sketch. To select multiple scan boards, press the left button and drag the mouse.

#### > Step 3

Click Send button and the parameter settings will be sent all or the specified receiver cards.

# 5.1.5 Adjust the Resolution and Refresh Rate

If the resolution or refresh rate of the input DVI video is different from that saved in the sending board which the DVI video is input into, the related LED display may not be able to work normally. For example, the image shown could be zoomed in or out, overlapped, or flashing. To avoid these problems, the resolutions and refreshed rates of the input AVI video and the sending board must be the same. Following are steps to adjust the sending board resolution and refresh rate for the case that it is inconvenient to change the AVI video resolution and refresh rate.



#### > Step 1

Open the Sending Board page in the Screen Config window. Shown in Fig.5-34 is the Sending Board page. Adjust the parameters in the **Set the sending board display mode** panel as required.

Sending Board	Scan Board Screen	Connection		
Current Displa	y Mode			
Sending Boa Resolution:	ard 1440 x 900	Graphics output resolution:	1440 x 900	Refresh
- Set the sendin	g board display mod	e		
Resolution:	1440 x 900 px	Custom:	1440 🌲 🗴	900 🗘
Refresh Rate	e: 60	✓ Hz		Set

Fig. 5-34 The Sending Board page

#### **Sending Board Resolution**

This is the image resolution saved in the sending board.

#### **Graphics output resolution**

This is the image resolution of the output AVI video of the computer graphic card.

#### Refresh

Click this button to update the Sending Board Resolution and the Graphics output resolution.

#### Resolution

This is the resolution that is going to be set for the sending board. Select one from the drop-off

list.

#### **Refresh Rate**

This is the refresh rate that is going to be set for the sending board. Select one from the drop-off

list.

#### Custom

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Check this option to customize the sending board resolution.

#### > Step 2

Click **Set** button in the **Set the sending board display mode** panel to send the new set resolution and refresh rate to the sending board.

#### > Step 3

Switch the graphic card mode from duplicate or extend to single display and then switch back. This operation is to avoid physical reconnecting DVI cable for the graphic card to update sending board info.

#### > Step 4

If refresh rate is changed, parameters settings on the Scan Board page must be resent. If it is not sent, the receiving card may self-adapt to the refresh rate; when the refresh rate is too high and exceeds the on-load range, the receiving card will not self-adapt to the refresh rate, then the new refresh rate must be sent to the receiving card.

If the resolution of the final DVI video is different from that of the computer which is use to configure the Mars serial LED display control system, the sending board resolution must be set as that of the final DVI video when the configuration operation is finished. If the refresh rate of the final DVI video is different from that of the computer which is use to configure the Mars serial LED display control system, the sending board refresh rate must be set as that of the final DVI video when the configuration operation is finished. And don' t forget to resend the parameters settings on the Scan Board page.

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# 5.1.6 3D Config

As shown below, click "Config" to allow the 3D parameter configuration. The option will be shown when 3D sending board connect to the system.

The video modes are Side By Side, Frame Packing and Top And Button. The phase control covers Left Eye First and Right Eye First.

Click "Send" to send the parameters to the hardware. Note: The sent parameters are only available after the "Enable 3D" is ticked off.

🖳 Screen Config-COM4 📃 📃 💌
Sending Board Scan Board Screen Connection
Display Mode
Current Display Mode
Sending Board Resolution: 928 x 600 Graphics output resolution: 1440 x 900 Refresh
Set the sending board display mode
Resolution: 640 x 480 px - Custom: 928 🖨 x 600 🚔
Refresh Rate: 50 Hz
Set 3D: Config
Hot Backup Setting
Set the current device: Set Master Device Set Slave Device
Master Device Slave Device
Master Sending Board Index         Master Port Index         Slave Sending Board Index         Slave Port Index
Refresh Send Add Edit Delete
HDMI Cards Settings
Auto Select
Video Input Selection:
Audio Input Selection: External
Bit Of Input Source: 8 Bit - Resresh
Factory Restore Save Config File Save Close

NOVASTAR			NovaStar Tech Co.Ltd
Configure 3D parameter	s		×
💟 Enable 3D			
Video parameter			
Video mode:	Side by Side 🔻		
Phase control:	Top and Button Frame Packing Side by Side V Left eye first	🥅 Right eye first	
		Send	

Fig. 5-35 Configure 3D parameters

# 5.1.7 Set Hot Backup for Receiver Cards

The hot backup setting makes the connection of relating the receiver cards into a loop. In the case that some Ethernet cable within the loop is disconnected by accident, a slave device will take over the receiver cards behind the disconnection point and keep the LED display working normally.

Shown in Fig.5-36 is panel on the Sending Board page for Hot Backup Setting.

Hot Backup Setting			
Master De	evice	Slave D	evice
Master Sending Board Index	Master Port Index	Slave Sending Board Index	Slave Port Index
	1	1	4
Refresh Send		Add	dit Delete

Fig. 5-36 The Hot Backup Setting panel

# **Master Device**

Master Sending Board Index --- this is the index of the sending board which is to be set as a



master device.

Master Port Index --- this is the index of the Ethernet port of a master device (sending board)

that is used to output data.

**Slave Device** 

Slave Sending Board Index --- this is the index of the sending board which is to be set as a slave

device.

Slave Port Index --- this is the index of the Ethernet port of a slave device (sending board) that is

used to output data.

#### Refresh

To update the current hot backup information.

#### Send

To send the hot backup settings to hardware.

#### New

To add a new record into the hot backup info list.

#### Edit

To edit a record in the hot backup info list.

# Delete

To delete a record in the hot backup info list.

# > Step 1

Click Add button to open the dialog for adding a hot backup record. The dialog is as shown in

Fig.5-37.

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Master Sending Board Index:	1	\$	Slave Sending Board Index:	1	\$
	-	0000		2	
Master Port Index:	1	Ŷ	Slave Port Index:	2	Ŷ

Fig. 5-37 The Hot Backup Setting dialog

# > Step 2

Enter the indexes as required and click the **Add** button on the dialog.

	1.	Only for the sending boards that are in the same cascade chain can master-slave
		hot backup relation be set.
	2.	Ethernet ports of the same sending board can also be set as hot backup of each
		other. As in Fig.5-32, the Ethernet port 2 is the hot backup of the Ethernet port 1.
	3.	Hot backup can be set between the Ethernet ports of a sending board.
	4.	A slave device can't be set as a master device when it is the hot backup of
		another sending board. To clear the slave status of a sending board, delete the
		record indicating it as a slave device and click Send button in the Hot Backup
d		Setting panel to change the hardware settings.
en)	5.	The sending board that is used for LED display configuration (refer to $5.1.2.2$ LED
		Display Configuration) can't set as a slave device unless the LED display
V		configuration information on it has been deleted.

# > Step 3

Click **Send** button to send the hot backup settings to the hardware.

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# 5.1.8 HDMI Settings (MSD600/MCTRL600/MCTRL610)

Sending cards supporting HDMI interface need to set this option.

HDMI Settings			
Auto Select			
Audio Input S	External		
Video Input S	DVI		
Bit Of Input S	8 Bit 🗸	Send	Resresh



Automatic input mode: Select "Automatic Input Mode" to enter into the automatic input mode, and the system will automatically detect and select the corresponding port with video input.

# Manual input mode:

- > Video input options: DVI input or HDMI HD input can be opted;
- > Audio Input Options: external audio or HDMI audio input can be opted;
- > The digits of input source: 8 digits or 12 digits.

After setting the above options, click on the "Send" to send the parameters to the hardware.

# 5.1.9 Save Settings to FLASH

Once data is saved in the FLASH chips of the hardware, the saved data won' t be lost even the

hardware is powered off. To save the settings to FLASH, click the Save button at the lower right

corner of the Screen Config window .

 Note :

 Image: Please save the settings to FLASH (click the Save button) after sending settings of the LED display configuration, performance parameters and hot backup to



hardware.

# 5.1.10 Save/Load Configuration Files

There are four types of configuration files at present, the module configuration file, the receiver

card configuration file, the LED display configuration file and the system configuration file.

# Module Configuration File

Saved in a module configuration file are the settings of modules. Module configuration files can

be used for quick configuration of modules requiring the same kind of settings.

# **Receiver Card Configuration File**

Saved in a receiver card configuration file are the settings of receiver cards. Receiver card configuration files can be used for quick configuration of cabinets requiring the same kind of settings.

# **LED Display Configuration File**

Saved in a LED display configuration file are the information of how receiver cards are put together to construct a LED display. The LED display configuration files can be used for quick construction of a LED display.

# System Configuration File

Saved is a system configuration file is the complete setting information of a LED display control system. it can be used to quickly recover a LED display control system from error, or to quickly start a LED display.

# > Save a module configuration file

There are two ways to save a module configuration file.

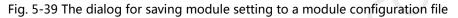
The first is to save it at the last step of smart setting (please refer to 5.1.2.1 Smart Setting -> Step



<u>9</u>for details). Shown in Fig.5-39 is the dialog for saving module settings to a module

configuration file.

lote: You can save mod	ile to file or cabi	inet database for	later using.		
Module Name:					
Option 1: Save me	dule to file				
File Path:				Browse	
) Option 2: Save mo	dule to database				
Cabinet Database			Change Database	View	



The other way is to click button in the **Module Info** panel of the **Receiver Card** page. The

module settings can be saved to a module configuration file through the opened dialog. Shown

in Fig.5-40 is <b>Module Info</b> panel of the <b>Receiver Card</b> page that the $\ {f L}$		button is on.
---	--	---------------

Sending Board	Scan Board	Screen Connection				
~Module Info-						
Chip:	Common C	C Size:	16W×16H	Scan Type:	Static	>>
Direction:	Horizontal	Decode Type	e: 74HC138 Decodi	no Data Group:	8	

Fig. 5-40 The Module Info panel

# > Load a module configuration file

In smart setting step 2 (Please refer to 5.1.2.1 Smart Setting -> Step 2), select Option 2: Load

module from file on the Smart Setting dialog and follow the instructions.

#### > Save a receiver card configuration file

To save settings to a receiver card configuration file, click the Save File button at the bottom of

the Scan Board page on the Screen Config window and follow the instructions. Shown in

Fig.5-41 is the **Scan Board** page.

Sending Board Scan	Board Screen Connection					
Module Info Chip: Direction:	Common C Size: Horizontal Decode	32W×32H Type: 74HC138 D	Scan Ty lecoding Data Gi		>>	
Regular Pixel Width: Pixel Height: Module Casc.	90 🗘 <=96 32 🗘 <=256 Right to Left	Please make sure the width and height	) Irregular Width: ?? Loading error. Plea Construct	Heicht ?? se adiust oerfor View Cabinet	Please make sure the width and height	
Performance Setti Group Swap	More Setting					
Refresh Rate:	240 💙 Hz	Accelerate	e R 4	~		
Gray Scale:	Normal 16384 🐱	Gray Mode	e: Gray First	~		
Data Clock:	12.5 💙 MHz	Data Duty	50	✓ (25~75) %		
Clock Phase:	3 🗸	Low Gray		\$		
Blanking Time:	25 🗘 (=2.	00us) Ghost Co	20 20	\$ (1~24)	<pre>( ) *</pre>	
Line Change T	3 0~	19)				
Brightness Effi	52.31%	Min OE:	24 ns			

Fig. 5-41 The Scan Board page

# > Load a receiver card configuration file

To load a receiver card configuration file, click the Load File button at the bottom of the Scan

Board page on the Screen Config window and follow the instructions.

# > Save a LED display configuration file

To save settings to a LED display configuration file, click the Save File button at the bottom of the

Screen Configuration page of the Screen Config window and follow the instructions. Shown in

Fig.5-42 is the **Screen Configuration** page.



Screen Config-COM3					
Sending Board Scan Board Screen Connection					
Screen1 Screen2 Screen3			Screen N 3	- Config	
Screen Type:  Simple Screen	Standard Scree	n 🔘 Comple	x Screen		
Basic Information Location: X: 0 Y: 0	Virtual Mode:	🔲 Enable	📄 3D E		
The current network port operations Sending Board Index	Scan Board Columns: 3	Scan Board Rows:	2 ResetAll	🗖 Hide Line	
1	1	2	3		
	Sending Port:1 1 Scan Bi	Port:1	Sending#:1 Port:1		
Port Index	Width:1 Height:	28 Width:128 28 Height:128	Width:128 Height:128		
Connect to d	≥ 2 Sending Port:1 ≥ 2 Scan Bo Width:1 Height:1	Port:1 Bean Boll5 28 Width:128	Sending#:1 Port:1 Coan EB 6 Width:128 Height:128		
Scan Board Size					
Width: 128					
Height: 128					
Detect Status		Read File	Save File Read	from HW Send To HW	
Factory Restore		Save C	Config File	e Close	

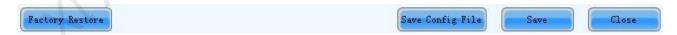
Fig. 5-42 The Screen Configuration page

> Load a LED display configuration file

To load a LED display configuration file, click the Read File button at the bottom of the Screen

Configuration page on the Screen Config window and follow the instructions.

# > Save a system configuration file



To save settings to a system configuration file, click the Save Config File button at the bottom of

the Screen Config window and follow the instructions.

#### > Load a system configuration file

Please refer to 5.1.1 Start with System Configuration Files for details.

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# 5.2 Adjust the brightness, display quality, Gamma and Current Gain

Click Brightness button from the tool bar or select Tools->Brightness from the main menu of

the NovaLCT-Mars application main interface to open the **Display Adjustment** window for

brightness, display quality, Gamma and color temperature adjustment.

Among that, the current gain setting page defaults to be hidden; and this setting page can be

displayed by click

# Advanced Set

# 5.2.1 Manual Adjustment

Select **Manual** in the **Adjustment Mode** panel to open manual adjustment page. Shown in Fig.5-43 is the manual setting page of the **Display Adjustment** window.



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----------

Display Adjustment	×
COM4-Screen1 COM4-Screen2 COM4-Screen3	COM4-Screen4
Adjustment Mode  Manual © Sched Config	Auto Config O Auto adiust Config
<ul> <li>Display Quality</li> <li>Soft Mode</li> <li>Enhanced</li> </ul>	Gamma Adjustment Mode Fixed Value
- Brightness Adjustment	🖲 Mode A 🛛 💿 Mode B
	171 2.8 Custom Gamma Ta.
Color Temperature Adjustment	(67.1%)
Gain	RGB brightness
R:	0 % R: < 255 (100.0%)
G:	0 % G: ▲ 254 (99.6%)
B: ◀ ▶ 10	0 % <b>B</b> : • 255
Synchronous	/alue (100.0%)
Color Temperature Brightness Mode	Refresh Save To Hardware
	$\boldsymbol{\succ}$
BeginRead Scan Board Parameters	.:

Fig. 5-43 The manual adjustment page of the Display Adjustment window

# **Display quality**

There are two modes for display quality, soft mode and strengthen mode. Use soft mode for the situation that the environment brightness is not very high. Strengthen mode is better when the background is very bright.

# Gamma Adjustment

If Fixed Value is selected, the Gamma coefficient can be any value between 1 and 4. And the

default value is 2.8. Select **Custom** to manually define the Gamma table.

#### **Brightness Adjustment**

Brightness can be adjusted by the slide bar. All together there are 256 levels of brightness. If the **Bright Mode Table** was configured and **Enable Bright Mode Table** was checked, the software will adjust the brightness of the screen by the **Bright Mode Table** when pull the slide bar.

#### **Color Temperature Adjustment**

Color temperature adjustment can be done in two ways, **Advanced mode** and color **Normal mode**. Choose one as you want. Select **Advanced mode** and the color temperature can be adjusted through the brightness and current gains of Red, Green and Blue components. Click **Normal mode** button to open the dialog for color temperature table configuration. Color temperature can be adjusted by dragging the bar of RGB brightness or modify the value directly.

Click to pull the bar to adjust the color temperature.

Check the option "Custom" to adjust RGB current gain and RGB brightness.

#### Note :

Current gain adjustment option won't be available if the LED light driver chips do not support current gain adjustment.

If the color temperature table has been set, NovaLCT-Mars will adjust the LED display settings

according to the current brightness setting and keep the color temperature unchanged.

#### Note :

Professional equipment is necessary to find out the current gains and brightness of

red, green and blue for different LED display brightness of certain color temperature.



## 5.2.1.1 Gamma

After the custom Gamma table is finished, click "send" to send Gamma table to the receiving card,

X Gamma Adjustment You can edit certain value Generating the gamma table fastly by adjusting the Gamma curves in Gamma table. b \* 255 \* \* X-Axis: х Y Move Up 0 65535 ≑ 0 \* Y-Axis: Move Dow 1 1 Þ. ۲ 2.1 Gamma Value 2 2 Save Recommended Gamma 3 6 Load Original AMode B Mode 4 11 5 17 6 25 34 7 8 46 9 58 73 10 11 89 12 107 13 126 14 148 15 550 16 196 Send Exit

and save it to the configuration file of the receiving card.

Fig. 5-44 Gamma Adjustment

# 5.2.2 Schedule Adjustment

Select **Schedule** in the **Adjustment Mode** panel to open schedule adjustment page. Schedule adjustment is to generate a time table and the LED display brightness, Gamma, color temperature and brightness mode will be adjusted according to the time table. Shown in Fig.5-45 is the schedule adjustment page of the **Display Adjustment** window.

Click Config button according to the instruction and the Config Schedule File window will be

opened. Shown in Fig.5-46 is the **Config Schedule File** window. Click Add to add schedule (time table)for adjustment and NovaLCT-Mars will perform the adjustment operations



automatically according to the schedule.

Display Adjustment				
COM4-Screen1 COM4-Screen2 COM4-Screen3 COM4-Screen4				
Adjustment Mode				
Manual 💿 Sched Config 🔿 Auto Config 🛇 Auto adiust Config				
Current Brightness Brightn 255 R: 255 G: 255 B: 255 Refresh				
'Schedual':Adjust brightness, Gamma and color				
temperature according to time table! Please click 'Config'!				
TAM				
NA				
BeginRead Scan Board Parameters				

Fig. 5-45 The Schedule setting page of the Display Adjustment window



Config Schedual File			83	
Time	Brightness		Add	
11:00	10%			
Add schedule	<b>—</b>		Edit	
Edit Schedual – Start Time:	11:00		Delete	
Brightness:	10 🗸 %		Clear	
Add	Exit			$\langle O \rangle$
	ок	Cancel	Apply	

Fig. 5-46 The Config Schedule File window

	Note :
nd	The time of the computer on which NovaLCT-Mars is running is the base of the
6	schedule. If the computer time is not correct, the adjustment operation will not be
	performed at the expected time.

# 5.2.3 Auto

Auto adjustment is to adjust LED display brightness according to the environment brightness.

Light sensors are used to determine the environment brightness.

# 5.2.3.1 Light Sensor Setting

Select Auto in the Adjustment Mode panel to open the page for auto adjustment. Shown in

Fig.5-47 is the auto adjustment page.

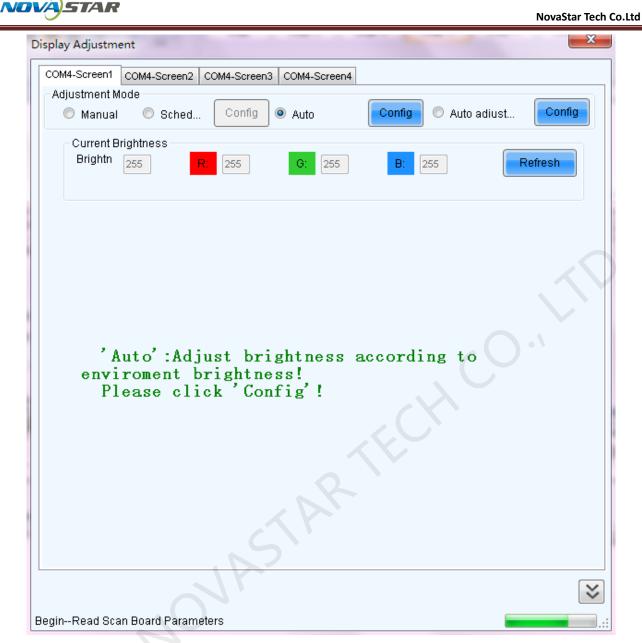


Fig. 5-47 The Auto Adjustment page

Click **Config** button to open the Auto Brightness window. Shown in Fig.5-48 is the Auto Brightness window. Set the parameters for auto brightness through the Auto Brightness window.

ito Brightness							x
Light Sensor for Aut	o Brightness						
Stat Index #	Address						<b>=</b>
							<b>S</b>
O a culata Tima aflu							
-Caculate Type of Lu			A	erane affe	r remove i	maximum	and
Average of all I	light sensor			inimum	a remove i	maximum	anu
Adjustive Relations	hip of Auto Br	ightness-					
<b>E</b> nvironment	t Dvizebte						
Environmen	il Brighth		S	creen Brig	htness		
Above	12000	🚔 lux	>	80	<b>\$</b>	$\sim O$	
Linear adjustme	nt between m	nininum ar	nd maxi	num			
Numbers of S	•			(	• 1	0	
Below	20	🖹 lux	>	40	÷ %	)	
Advanced Setu				Ok		Can	cel

Fig. 5-48 The Auto Brightness page

The LED display control system uses light sensors to get the environment brightness. Click button and NovaLCT-Mars will automatically detect light sensors that are connected with sending boards and add them to the lightness sensor list, as shown in the upper light sensor list on Fig.5-49. Light sensors connected to multifunction cards can be configured through the function card management page.

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80 a 'Function Card Value	Read <b>Page!</b> Operate
Value	Operate
	.0.1
	OK

Fig. 5-49 light sensor lists page

### The retry number when adjustment failed

If NovaLCT-Mars fails in auto brightness adjustment, it will retry the adjustment again. The number set here is times NovaLCT-Mars try to adjust the brightness before it give up.

### Calculate Type of Lux

This is to specify how the final result is calculated from the measurement results of all light sensors.

#### **Enable Bright Mode Table**

The Brightness of the screen will be adjusted by the Bright Mode Table and the environmental

luminance if the Enable Bright Mode Table option is checked.

### **Fix Color Temperature**

If this option is selected, the LED display brightness will be adjusted according to the color

temperature table and the environment brightness.

#### Number of Segments

Thresholds need to be set for automatic brightness adjustment. When the environment brightness is higher than the high side threshold, a high brightness level will be set for the screen, for example 100%. And while the environment brightness is lower than the low side threshold, a low brightness level is set. The interval between the high and low threshold of environment brightness is linearly divided into subsections with subsection number equals the Number of Segments. So does the interval between the high and low LED display brightness levels. If the environment brightness is in certain subsection, the corresponding brightness level will be set for the LED display. The maximum number is 10.

As can be seen in Fig. 5-50, the scope of the threshold is that: if the environmental brightness is smaller than 10lux or 10lux-100lux, the 5% screen brightness shall be selected. If the environmental brightness is larger than 100lux, the 80% screen brightness shall be selected. Select the "Advanced Setting" to add several thresholds, and respectively enter the environmental brightness and the screen brightness boundaries. See Fig. 5-51, the environmental brightness that is less than 20lux or between 20lux and 100lux corresponds to 30% screen brightness, the environmental brightness that is between 100lux- 200lux corresponds to 80% of the screen brightness, and the environmental brightness that is larger 200lux corresponds to 100% of the screen brightness.



Environmen	t Brightn	Screen Brig	ntness	
Above	100 🗘 lux	> 80	\$ %	
	nt between mininum and	d maxinum	Linear	adjustment
Numbers of S	<	]	> 10	
Below	10 🗘 lux	_> 5	\$ %	
dvanced Setu		ок	Ca	incel

Fig. 5-50 Segment interval setting

		Ambient Brightness	Screen Brightness				
	1	200	100				
	2	100	80				
I	3	20	30				
*	4						
R							
Ge	ener	ral Setup	OK Cancel				

Fig. 5-51 Several thresholds test for segment intervals

	Note:
	NovaLCT-Mars first generates the environment brightness value from measurement
d	results of all available light sensors according to the calculating type. And then
any	NovaLCT-Mars uses the generated environment brightness to adjust the LED display
	brightness according to the parameter settings, such as brightness thresholds,
	segment numbers.



### 5.2.3.2 Auto Brightness Time Interval

The following steps are to set the time interval for auto brightness.

### > Step 1

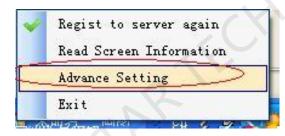
Click right button on the circled panel icon (as shown in Fig.5-52) and select Advance Setting

from the pop-up menu (as shown in Fig.5-53) to open the Advance Setting window (as shown in

Fig.5-54).



Fig. 5-52 brightness adjustment icon in the OS interface panel



#### Fig. 5-53 The pop up menu

		30	Days	
2	Auto Adjustment Info: Detect Period:	10	⇒ s	
	light sensor valu	ng every auto a e N times, and	adjustment, we will i caculate the avera	ge value
		ing to this ave	um, then we adjust rage value and the	

Fig. 5-54 the Advance Setting window for auto brightness

#### > Step 2

Set the values for **Detect Period** and **Read times of light sensors**. **Detect Period** is the time

period the light sensors measure the environment brightness. **Read times of light sensors** is the times that NovaLCT-Mars reads the measurement results of the light sensors. Thus the auto brightness time interval is the production of Detect Period and Read times of light sensors.

For example, if light sensors measure the environment brightness every 10 second (this is the Detect Period.) and NovaLCT-Mars reads the measurement results of the light sensors for 5 times (this is the Read times of light sensor.) before adjusting the LED display brightness, the auto brightness time interval will be 50 seconds.

Note:

The default values for Detect Period and Read times of light sensors are 60 seconds and 5 times respectively. Thus the auto brightness time interval is 300 seconds or 5 minutes by default.

## 5.2.4 Auto Adjustment By Hardware

When the hardware and software(NovaLCT-Mars) is not connected, you can configure to auto adjustment by hardware, and the operation are basically same with Auto adjustment(5.2.3 Auto), the difference is the auto adjustment by hardware added Adjustable parameter Settings. show Fig.5-55 and Fig5-56.



tat Index Address	2
ailed: <u>More Settings</u>	2
ailed: <u>More Settings</u>	3
ailed: <u>More Settings</u>	۷.
ailed: <u>More Settings</u>	
ailed: <u>More Settings</u>	
alled:	
culate Type of Lux	
Average of all light sensor Overage after remove maximum and minimum	
	-1
ustive Relationship of Auto Brightness	
Fixed Colo	
Environment Brightn Screen Brightness	
Above 12000 🚔 lux> 80 🚔 %	
	-
Linear adjustment between mininum and maxinum	
Numbers of 9	
Numbers of a 10	
Below 20 10 40 20 %	

Fig. 5-55 Auto adjustments by hardware

Click More Settings in Fig.5-55 to open the Adjustable parameter Settings window (as shown in

Fig.5-56).



Adjustable parameter settings
Failure to read the ambient brightness, adjust brightness to 5 ★ %
Adjustable speed settings
🔽 Enable brightness gradient
Auto Adjustment information
Detect Period: 60 🚖 S
Read times of light 5
Notice:Before doing every auto adjustment, we will read the light sensor value N times, and caculate the average value after removing maximum and minimum, then we adjust screen brightness according to this average value and the linear
straight which you set!
Ok Cancel

Fig. 5-56 The Adjustable parameter setting window

Set the values for **Detect Period** and **Read times of light sensors**. **Detect Period** is the time period the light sensors measure the environment brightness. **Read times of light sensors** is the times that NovaLCT-Mars reads the measurement results of the light sensors. Thus the auto brightness time interval is the production of Detect Period and Read times of light sensors. For example, if light sensors measure the environment brightness every 10 second (this is the Detect Period.) and NovaLCT-Mars reads the measurement results of the light sensors for 5 times

(this is the Read times of light sensor.) before adjusting the LED display brightness, the auto

brightness time interval will be 50 seconds.

#### Note:

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The default values for Detect Period and Read times of light sensors are 60 seconds and 5 times respectively. Thus the auto brightness time interval is 300 seconds or 5

minutes by default.

# 5.3 **Display Control**

Click Display Control button from the tool bar or select Tools->Display Control from the main

menu of the NovaLCT-Mars application main interface to open the Screen Control window.

🔜 Screen Control				
COM6-Screen1				
Kill	Lock	Run		)•\
Self Test				
Normal	*	Send		
		XE		
	0		Close	
			.4	

Fig. 5-57 The Screen Control window

### Kill

Show nothing on the LED display.

### Lock

Always show the current image frame of the LED display.

### Run

Switch the LED display back to normal from Kill or Lock.

### Self Test

Show the test images generated by the receiver card for LED displays aging test or error

detecting.

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# 5.4 Check Hardware Info

Click Tool ->Hardware Information from the main menu to open the Hardware Information

page. Shown in Fig.5-58 is the Hardware Information page.

😸 Hardware Information	n 🔲 🗖 🔀
-Time	
Time of Hardware:	2012-06-12 17:12:42 🗢 Read Set
Select Serial Port	
Current Serial Port: CO	M4 💌
Sending Board SN	
Serial Number	SN Number
▶ 1	1202-1000-0000-0199
_	
	Refresh
-Hardware Version Info	
💿 Refresh All 🔵 Refres	h One Sending Board: 1 🗇 Port: 1 🗇 Scan Board: 1 🗢 Refresh
😑 V5.2.1.0 Total 1, Rema	arks: 2012. 05. 23
- Position:Sending#1	STAN
Sending Board MCV Sending	g Board FPGA Scan Board FPGA
Communication Info	
2012-6-12 19:32:15Current	control system address:1 port 3 Read FPGA program version of sca 🛆
2012-6-12 19:32:15Current	control system address:1 port 4 Read FPGA program version of sca
Current control system addr	ess:1 port 4 Read FFGA program version of scan board 0 .

Fig. 5-58 The Hardware Information page

### **Current Serial Port**

If more than one Mars serial LED display control system is connected to the computer, set the serial port through which the Mars serial LED display control system to be configured as the current serial port.

### Time of Hardware



This is the date and time of the current Mars serial LED display control system. Click **Read** button to update the hardware time shown in the Time panel. Click **Set** button to set the time of the current Mars serial LED display control system as that of the computer.

### Note:

The date information has been set for the Mars serial LED display control systems

when produced. Only time (hour, minute and second) is set here for the control

system hardware.

### Hardware Version

This includes the version information of the MCU, sending boards and receiver cards.

	Note:
and a	The sending board version information is that of the first sending board connected
	with the current serial port.

### Sending Board SN

Listed are the SNs of all sending boards of the current serial port. To update the listed SNs, click

### Refresh button.

# 5.5 Manage the LED Displays

To make brightness control and monitoring easier, multiple LED displays can be combined together. The combined is called a combination display.

Select Tool ->Multiple Screen Management to open the Combination Display Config window

for combination display configuration. Shown in Fig.5-59 is the Combination Display Config

window.

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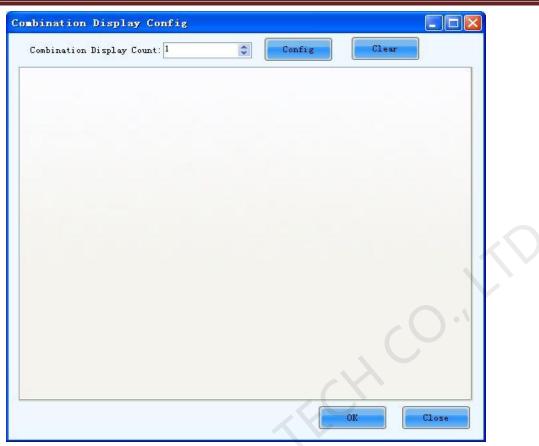


Fig. 5-59 The Combination Display Config window

#### **Combination Display Count**

This is the number of combination displays to be configured.

Following are the steps for combination display configuration.

#### > Step 1

Set the **Combination Display Count** as required and click the **Config** button. The combination display pages will be shown on the Combination Display Config window. There is only one combination display page because the Combination Display Count is set as 1. Set the Screen Count as required in the combination display page. **Screen Count** is the number of LED displays that will be combined into the combination display. Click **Config** in the combination page and a sketch map will be shown in the combination page, as shown in Fig.5-60. Here **Screen Count** is 3, thus there are 3 colored rectangles labeled 1, 2 and 3 respectively in the sketch map.



Combination Display Con					
Combination Display Count:	1	Config	Clear		
1 Name: Screen Count: Zoom:	1 3 🗘	Config 0.	Reset		
2	3 ?		<u>.</u>		
			ok 👘	Close	

Fig. 5-60 Combination display setting page 1

#### > Step 2

Click left button of the rectangle labeled 1 to Screen information window, as shown in Fig.5-61. Appoint one of the three LED displays as Display 1 (the rectangle labeled 1 represent Display 1.) by specifying the serial port it connects to the computer and the its index in the screen list. Note that listed in the screen list are the LED displays that are connected to the computer through the specified serial port.

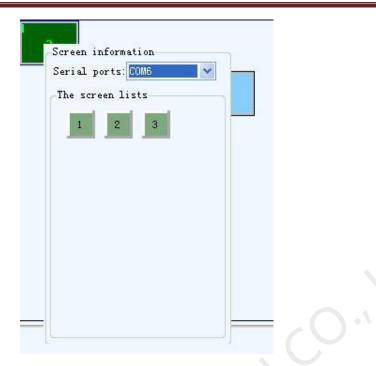


Fig. 5-61 The Screen information window

### **Serial ports**

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This is the serial port that the target LED display is connected to the computer.

#### The screen list

This is the index of the target LED display in the screen list of the specified serial port.

#### > Step 3

Do the same for the other displays of the combination display.



Combination Dis Combination Disp		Config Clear	
Name: Screen Count: Zoom: 1 COM6-Screen1	2 COM6-Screen2	Config 0.39 COM6-Screen3	
			) lose

Fig. 5-62 The combination display after configuration

The layout of the displays in the combination display can also be arranged. Use the mouse to drag the displays. The same layout will also be used in the monitoring pages.

# 5.6 Monitor the System

Mars series control system provides monitoring function, covering DVI signal of sending card, hardware status, temperature, humidity, smoke, fan, power supply, cabinet, and door status. Register the screen of this system into NovaCare server; if there is network, log in NovaCare website or NovaCare mobile client at any time for remote monitoring of the hardware status of

the screen, and timely notify the user with the occurred fault through Email.



Register the screen of this system into NovaCare server; if there is network, log in NovaCare website or NovaCare mobile client at any time for remote monitoring of the hardware status of the screen, and timely notify the user with the occurred fault through Email.

Click Monitor to enter the monitoring interface, an	d click Monitoring refresh to check hardware
status data of all screens of this system. Then	click <b>Configuration</b> to perform monitoring
configuration.	
0 NovaLCT-Mars V4.2.5 S2 T2	
System(S) Tools(C) Plug-in Tool(P) User(U) Language(L	ang)(L) Help(H)
Screen Config Brightness Calibration	iton Function Card
- Local System Info	
Control System: 1 Other Device: Uni	nown <u>View Detail</u>
Monitor Info	
	: 🖌 🗿 📠 🗔
Server Status: Server Version:3.0	



😸 Monitor - Sending Board Sta	tus 🔲 🛛 🗶
Image: COM3       1         Image: COM3       1 <t< th=""><th>Refresh Monitor Setting Email Setting DVI Exception Wonitor-Control Unknown Control Log</th></t<>	Refresh Monitor Setting Email Setting DVI Exception Wonitor-Control Unknown Control Log
Refresh Period: None	The time to next refresh: None
2012-6-7 11:48:28COM3:读监控信息结束!	<b>^</b>
2012-6-7 11:48:28开始读发送卡DVI信息 2012-6-7 11:48:28读监控信息结束!	
Fault (Alarm) Information Communicati	
读监控信息结束!	

Fig. 5-63 the Monitor page

### Refresh

This button is used to update the monitored data.

### **Monitor Setting**

This button is used to edit the contents to be monitored and set rules for alarm.

### **Email Setting**

This button is used to set the email notification.

### Email Log

Click this button to check the log of the report email sent by NovaLCT-Mars monitoring

subsystem.

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### 5.6.1 Monitor Setting

### 5.6.1.1 **The Monitor Setting Page**

Shown in Fig.5-64 is the Monitor Setting page.

📃 Auto Refresh 🛛 🛛 Per	riod: 60	\$ S	
try times Setting			
Retry times after re status failed: fresh and Alarm Setting-	L	Times	
Refresh Setting			
<ul> <li>Refresh Status</li> <li>Connect Monitor Box</li> </ul>	Refresh Temperature	e 🔽 Refresh power of scan	board
Refresh Humidity	Refresh Smoke	🗌 Refresh cabinet statu	P. Guid at the off
🔽 Refresh Fan		4	
	has same number of fan	Setting	$\supset$
	has different number of f	an	7
Refresh power of	monitor board has same number of power	8	
C	has different number of p	ower Setting	>
Alarm Setting			
When > 6 temperature	0 🗘 °C, di sp	play alarm information.	enheit Temperture
Whe <mark>n</mark> > 6 humidity >	0 🗘 %, disp:	lay alarm information.	
When speed < 1	000 💲 speed/r	min, display alarm informatio	n.
	V dien	lay alarm information.	
When voltage < 4	r, disp.		

Fig. 5-64 the Monitor Setting page (for setting all displays)

### **Auto Refresh**

If this option is check, NovaLCT-Mars will automatically check the status and parameters being

monitored and update the monitored data periodically according to the period setting.

### Retry times after read status failed

This parameter determines how many time NovaLCT-Mars will retry to check the status and

parameters being monitored when it fails in doing so.

### **Refresh Status**

The status here refers to the working status of the receiver cards. If this option is selected, the

working status of the receiver cards will be under monitoring.

### **Refresh Temperature**

If this option is selected, the temperature within the cabinets will be under monitoring.

### Refresh power of scan board

If this option is selected, the power supplies of the receiver cards will be under monitoring.

### **Connect Monitor Board**

Monitor Boards are required for certain status and parameters monitoring. Select this option to

get those status and parameters under monitoring.

### **Refresh Humidity**

If this option is selected, the humidity within the cabinets will be under monitoring.

#### **Refresh Smoke**

If this option is selected, the smoke within the cabinets will be under monitoring.

### **Refresh cabinet status**

If this option is selected, the working status of the cabinets will be under monitoring.

### **Refresh status of Cabinet-Door**

If this option is selected, the open/close status of the cabinet doors will be under monitoring.

#### **Refresh Fan**

If this option is selected, the fans status will be under monitoring.

#### Every cabinet has same number of fan

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If for every cabinet, the number of fans to be monitored is the same, select this option and set the fan number in the box to the right of this option.

### Ever cabinet has different number of fan

If the numbers of fans to be monitored are different from one cabinet to another, select this option and click the **Setting** button to set the fan numbers for each cabinet.

### Refresh power of monitor board

If this option is selected, the power supplies on the monitor board will be under monitoring.

### Every cabinet has same number of power

If for every monitor board, the number of power supplies to be monitored is the same, select this option and set the power supplies number in the box to the right of this option.

### Every cabinet has different number of power

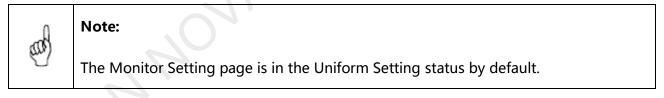
If the numbers of power supplies to be monitored are different from one monitor board to another, select this option and click the **Setting** button to set the power supplies numbers for each cabinet.

### **Single Setting**

Click this to set the monitoring options for each display individually. Shown in Fig.5-70 is the **Monitoring Setting** page for individual display monitoring option setting. The **Ever cabinet has different number of fan** and the **Every cabinet has different number of power** are available in this page. To return to the **Monitoring Setting** page that all displays can be set together, click **Uniform Setting** at the lower left corner of the page.

A	to Refresh Period: 60 🔅 S	
	imes Setting letry times after read status failed: and Alarm Setting	
OM6-:	creen1 COM6-Screen2 COM6-Screen3	
	esh Setting Refresh Status 🛛 🔽 Refresh Temperature 🔽 Refresh power of scan board	
	Connect Monitor Board           Refresh Humidity         Refresh Smoke         Refresh cabinet status         Cabinet-Door	
<	<ul> <li>Refresh Fan</li> <li>Every cabinet has same number of fan</li> <li>Every cabinet has different number of fan</li> </ul>	
	Refresh power of monitor board	
	Every cabinet has same number of power	
Ala	m Setting	
	When > 60 C, display alarm information.	
	When > 60 💸 Misplay alarm information.	
	When speed < 1000 🗢 speed/min, display alarm information.	

Fig. 5-65 the Monitor Setting page (for individual display setting)



### 5.6.1.2 **Display with Cabinets Varying in Fan/Power Supply Number**

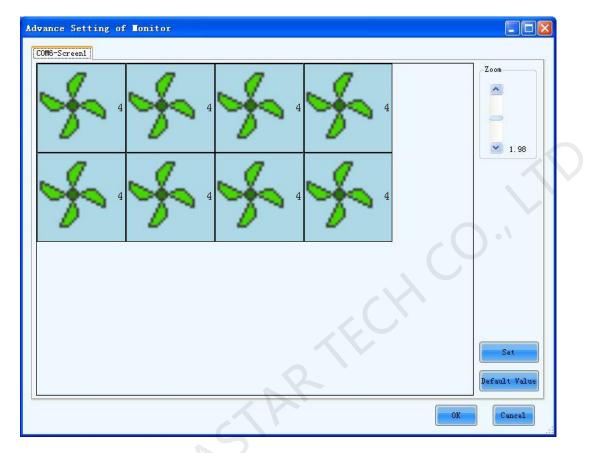
For a display of which the cabinets are different in fan/ power supply number, use the individual display Monitor Setting page for monitoring option setting. Click **Single Setting** at the lower left corner of the Monitor Setting page (Fig.5-60 )to open the individual display Monitor Setting page (Fig.5-75).

To set the fan / power supply number for each cabinet, click the **Setting** button to open the setting page after select **Refresh Fan / Refresh power of monitor board** and **Every cabinet has** 

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different number of fan / Every cabinet has different number of power. As an example, shown



in Fig.5-66 is the page for fan number setting for each cabinet.

Fig. 5-66 the Advance Setting of Monitor page for fan number setting

## 5.6.2 Email Notification Setting

Shown in Fig.5-67 is the page for email notification setting. Set the email notification according to the instructions given on the page.

If the sending system report e-mail is enabled, the regular sending could be set. The date could be set by clicking "E-mail Setting".



	Notification About Monitor Fault 🛛 🔀	
	otification Recoverv Notice I Svstem Report Email	
Set Regular Se	nding of System Operation Report Email	
Email Sender		
Email Addres Email Passw SMTP Server: Port:	NovaStarTech@126.com ********* smtb.126.com 25	
Modifv Sender	Use Default	
-Recipient		
Name	Email Address	)•1
Email Information – Email From:	A-1 (e.g.:Neighborhood A, Square B)	
CLog Setting	Saving Time Of Log : 7 🗘 Davs	
	Apply Close	

Fig. 5-67 the email notification setting page

## 5.6.3 Notification Email Log

Shown in Fig.5-68 is the **History** window for checking the notification emails. Information about the notification emails, such as date, error display index, email recipients and so on can be checked through this window.



Log Time		Wednesday, A	pril 18, 2012	*	Refresh	Delete Log
	Notify Date	Error Screen	Recipients	Title	Notification Content	EmailState

Fig. 5-68 the History window for notification emails checking

## 5.6.4 Monitor-Control

# 5.6.4.1 Configure Control Scheme

	Content	Display Number	Notify	Modif <sub>l</sub>	Delet)	Detai
1	Temperature $>$ 32°C, brightness decrease 50%, Tempera	t All		1	×	
2	Temperature > 70°C, brightness decrease 50%, Tempera	t All		1	×	

Fig. 5-69 Configuration Of Monitor-Control

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#### **Enable Monitor-Control**

The functions of Monitor-Control will work only when the option is checked.

### Valid days of logs

Set the valid days of logs.

One control information can be added by clicking the button 📰 in Fig.5-69. As it show in

Fig.5-70 is to add one temperature control information, as it show in Fig.5-71 is to add one

smoke control information.

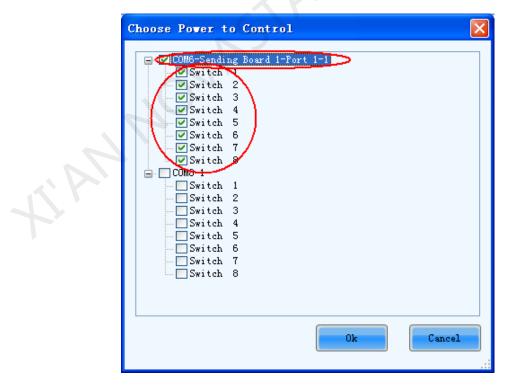
	All
Control Information	
Control Type:	Temperature Control
Decrease the bri	ightness
Temperature	The maximu
When the tem	60 < X < 70 < ℃
Brightness decrease	50 👻 %
🔘 Open Cooling Dev	vice
○ Power Off	

Fig. 5-70 Temperature Control Information



A	dd One Control Information	×	
	Display Number: Control Information Control Type: When the Smo >	All   Smoke Control  1	
	Power Off       Send e-mail after power	ver off <u>Configuring email infor</u>	
	Add	Exit	

#### Fig. 5-71 Smoke Control Information



### Fig. 5-72 Select The Controlled Power

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### 5.6.4.2 Monitor-Control Log

	Wednesday,	April 18, 2012 💌 Refresh	Delete Log
Log Information	1		
Time	Display Name	Control Information	Result
16:40:44	COM6-Screen1	Temperature $>$ 32°C, brightness decrease 50%	Succeed!
17:41:06	COM6-Screen1	Temperature $>$ 32°C, brightness decrease 50%	Succeed!

Fig. 5-73 Monitor-Control Log

### 5.6.4.3 Recovering Of Monitor-Control

The latest control information will show in the bottom right corner in the main form and the

monitor page. As it show in Fig.5-74 is the information which comes from the last control.



Fig. 5-74 Control Information In The Monitor Page

Click this link label to view the controlled information list as it show in Fig.5-75.

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inished Finish	Control ned Control —	Restore Control
Time	Display Name	Control Information
15:43:53	COM6-Screen1	Temperature > 32°C, brightness decrease 50%
	Log	Exit

Fig. 5-75 View The Control Information List

### **Recover Control**

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If the control scheme is performed (View 5.6.4.1 Configure Control Scheme to configure the

control scheme ), and the user can restart monitor-control by clicking this button after dealing

with the fault.

### View Log

Open the log-window and view the stored logs.

# 5.7 Error Dot Detect

The LED lights status checking function, also known as Error Dot Detect, is to check the working

status of each LED light on a LED display. NovaLCT-Mars can detect and locate LED lights that are

in open circuit or short circuit status.

#### Note:

1. Error Dot Detect is only available for LED displays of which the LED lights driver

chips support LED lights open/short circuit status checking.

 Driver chips supported by Mars serial LED display control systems and good for Error Dot Detect at present are MBI5036, MBI5034, MBI5040, DM13H and MBI5030.
 Monitor boards for Mars serial LED display control systems are required for Error Dot Detect.

Select **Tool** ->Error Dot Detect from the NovaLCT-Mars main menu to open the Error Dot Detect window for Error Dot Detect setting. Shown in Fig.5-76 is the Error Dot Detect window. As shown in the figure, the LED display under Error Dot Detecting has a receiver cards (one receiver card corresponds to a cabinet.) array of 2 rows and 4 columns. And the driver chips used are MBI5036.



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----------	------	--------

Ommunication port selec					
reen1					
creen Topological Graph		0.			Zoom
		0	.0		Unknown Error Normal No Monito
oint Detect Parameters					
Detect Type:	Open Circuit And Short Circuit				
Threshold Current: Current Gain	<ul><li>1</li><li>Enable</li></ul>	© 2 <u>Change Setti</u>	© 3 ng	◎ 4	
		Save C	Confi Detect Scre	Detect Sele	Pause Stop
				tenitor board is not connec ted scan board is:0,Total i	

Fig. 5-76The Error Dot Detect window

### **Serial Port Selected**

Specify the serial port through which the LED display to be operated is connected to the computer.

### **Error Dot Detect Parameters**

- > **Detect Type** --- This is the LED lights status type can be checked.
- > Threshold Current --- Set the current threshold for Error Dot Detect here by selecting an

index.

> Current Gain --- Current gain can be enabled/disabled here. To modify the current gain

settings, click the Change Setting item.



### **Detect Screen**

Click this button to perform Error Dot Detect on the whole display.

### **Detect Selected**

Click this button to perform Error Dot Detect on (the pixel array of) the selected receiver cards.

#### Pause

Click this button to pause the ongoing Error Dot Detect operation.

### Stop

Click this button to stop the ongoing Error Dot Detect operation.

#### Zoom

Drag the slide bar to zoom in or out of the LED display sketch map.

#### Notification panel

The information of the ongoing Error Dot Detect operation will be shown in this panel.

#### Colors of the LED display sketch map

- Gray --- the Error Dot Detect operation result is unknown. It may be due to hardware communication failure or receiver card setting error.
- > **Red** --- Error LED lights detected. The number shown is the number of the error LED lights.
- > **Green** --- No error LED lights detected.
- > Yellow --- the receiver card (cabinet) does not connected with a monitor card.

	Note:	
and	1.	Put the curse on the sketch map of a cabinet to show its information.
are	2.	Module specifications have effect on the Error Dot Detect result. Please set
		the Error Dot Detect parameters according to the module type.



In Fig.5-76 click on the cabinet in the sketch map to open the **Error Dot Detect Result of Modules** window for details about LED lights status information. Shown in Fig.5-77 is the **Error Dot Detect Result of Modules** window showing the LED lights status of the red cabinet in Fig.5-76.

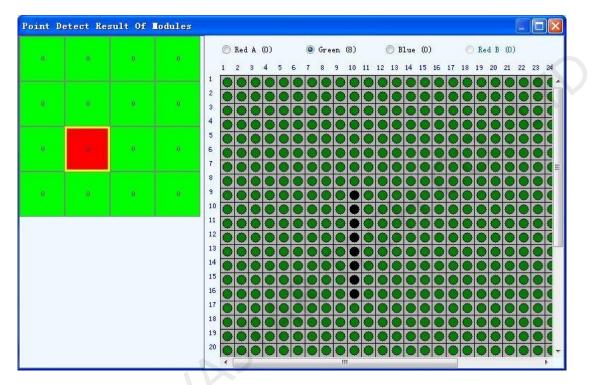


Fig. 5-77 the Error Dot Detect Result of Modules

Shown on the left of Fig.5-77 is the module array of the cabinet and on the right the pixel array of the selected module in the module array.

### Red A

This is the number of the error red LED lights of the selected module. Select this item to view the locations of the error lights in the pixel array sketch. The black points in the array are the error lights.

### Green

This is the number of the error green LED lights of the selected module. Select this item to view

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the locations of the error lights in the pixel array sketch.

#### Blue

This is the number of the error blue LED lights of the selected module. Select this item to view the

locations of the error lights in the pixel array sketch.

### Red B

This is the number of the error virtual red LED lights of the selected module. Select this item to

view the locations of the error lights in the pixel array sketch.

# 5.8 Brightness/Color Calibration

## 5.8.1 Online Calibration

In online calibration, NovaCLB connects with NovaLCT-Mars through network. Data and instructions for LED display calibration are exchanged through the network. Shown in Fig.5-78 is the page for online calibration.



📰 Screen Calibra	ation.
Current Serial	Online Calibration Offline Calibration Manage Coefficients
COM6 😽	Network Setting
	Local IP: 192.168.0.175 V Port: 8080 Reconnect
Current Screen	Communication Log
Screen1	18:01:27 Listening succeed
Screent	
Enable/Disnable — Calibraion	
Calibration	
	Save
Save	

Fig. 5-78 The page for online calibration

### **Current Serial Port**

This is the serial port through which the LED display to be calibrated is connected to the

computer.

### **Current Screen**

The LED displays connected to the computer will be list in this panel. Select the LED display to be

calibrated from the list.

### Local IP

This is the IP address that NovaLCT-Mars listens to. It is actually an IP of the

computer on which NovaLCT-Mars is running.



#### Port

This is the port that NovaLCT-Mars listens to.

### Reconnect

Click this button to terminate the current listening process and start a new listen process using

the settings of Local IP and Port.

### **Communication Log**

Records of the communication between NovaCLB and NovaLCT-Mars are listed is this panel.

### **Enable Calibration**

This option is to enable or disable LED display calibration using calibration coefficients.

### Save button in the Enable/Disable Calibration panel

Click this button to save the calibration switch status (enable or disable) to the hardware.

### Save button in the communication log panel

Click this button to save the communication log to a text file.

### 5.8.2 Manage Coefficients

This page is to adjust the calibration coefficients for better calibration

performance. Shown in Fig.5-79 is the Manage Coefficients page.



🖳 Screen Calibration	
Current operation	Online Calibration Offline Calibration Manage Coefficients
COM3  Current Screen  Screen1	Select Operation         1.Upload Coefficients         2.Save coefficients to database         3.Set coefficients for a new scan board         4.Set coefficients for a new module
	5.Adjust coefficients (Color is ununiform on screen) 6.Erase or reload coefficients
	7.ReSet coefficients
Enable/Disnable Calibraion Disable - (The Save	R

Fig. 5-79 The Manage Coefficients page

### **Upload Coefficients**

Upload a calibration coefficients database to the LED display.

### Save coefficients to database

This operation is to read back the calibration coefficients form the LED display and save them to a

database file.

### Set coefficients for a new scan board

This option is to set the calibration coefficients for a newly placed receiver card in the LED display.

### Set coefficients for a new module

This option is to set the calibration coefficients for a newly placed module in the LED display.



### **Adjust Coefficients**

This option is to adjust the calibration coefficients of the selected LED display area for better performance.

### **Erase or reload Coefficients**

This option is to erase or reload the calibration coefficients of the selected LED display.

### 5.8.2.1 Upload Coefficients

This is to upload the calibration coefficients and Adjust lines coefficients to the LED display thus

the LED display control system can use the coefficients to improve the image quality of the

display.

#### > Step 1

🖳 Screen Calibration	
Current operation communication — port	Online Calibration Offline Calibration Manage Coefficients
	Select Database
COM3 -	
Current Screen	
Screen1	SelectAdjust Line Browse
	Type: Unknown Cabinet ID:
Screen2	Columns: Unknown Rows: Unknown
	Discription: Unknown
Screen3	
Display Screen	
Main Display 👻	
Enable/Disnable Calibraion	
Chroma	Back Next Return
Save	

Fig. 5-80 The page for upload coefficients step 1

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#### Browse

Click this button to select the calibration coefficients database file to be uploaded.

### Туре

The type of the selected calibration coefficients database is shown here. There are two database types, screen database and cabinet database. A screen database contains calibration coefficients for a whole display while a cabinet database contains calibration coefficients for one or multiple cabinets.

### **Cabinet ID**

The cabinet ID(s) will be shown here if the selected is a cabinet calibration coefficient database

#### Columns

This is the column number of the calibration coefficient array of the selected database.

#### Rows

This is the row number of the calibration coefficient array of the selected database.

Click **Next** button to open the page for Step 2 after all settings.

#### > Step 2

This step is to specify the LED display area for which the calibration coefficients are to be uploaded. There are three options, Screen, Pixel, Topology or List.

#### Screen

If this option is selected, calibration coefficients for the whole display will be uploaded.

#### Pixel

Select this option to upload calibration coefficients to the specified pixel area.

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### **Topology or List**

Selected this option to upload calibration coefficients to the cabinets selected in the cabinet array sketch map or the cabinet list. (If the current LED display is a simple or a standard display, the sketch map of the cabinet array will be shown after this option is selected. Otherwise, if the current is a complex display, the show is the cabinet list.)

### Zoom

The zoom slide bar is for zoom in or out the cabinet array sketch map.

Shown below are the pages for the three options.

Select Uploa Screen:1	d Area Location:X=0,	¥=0 Siz	e:512 <b>V</b> ×256H			
💽 Screen	🔘 Pixel	🔘 Topol	ogy or List	Select Area On Screen		
T.		0	Operate	e all pixels!		
				Back	Next	Return

Fig. 5-81 The page for uploading calibration coefficients in Screen way

creen:1 Locatio	n:X=0, Y=0	Size:512 <b>W</b> ×256H	
🔵 Screen 💿 Pixel	0	Topology or List	Select Area On Screen
Start Columns	.lo	\$	
Start Rows of		\$	
Width:	512	÷	
Height:	256	\$	

Fig. 5-82 The page for uploading calibration coefficients in Pixel way

Area On Screen	Select Area	.ze:512W×256H	.on:X=0, Y=0 S:	Screen:1 Locati
	(1, 4)	(1, 3)	(1, 2)	(1, 1)
4)	(2, 4)	(2, 3)	(2, 2)	(2, 1)

Fig. 5-83 The page for uploading calibration coefficients in Topology or List way

NOVA STAR



Click **Next** to open the page for Step 3.

#### > Step 3

Shown in Fig.5-84 is the page for Step 3.

Upload Coefficients				
	⊙ Fast Upload	🚫 Stable Upload	Upload	Save
				10
			Back Finish	Return

Fig. 5-84 The upload calibration coefficients Step 3 page

### Fast Upload

The uploading speed will be set as maximum thus the time required for uploading is minimized if

this option is selected.

### Stable Upload

The uploading process is more stable and reliable for this option. But the time required is longer

than the Fast Upload option.

### Upload

Click this button to upload the selected calibration coefficients to the hardware.



#### Save

Save the selected calibration coefficients to hardware (FLASH). The saved data won' t be lost even the system is powered off.

### 5.8.2.2 Save Coefficients to Database

This operation is to read back the calibration coefficients form the current LED display and save them to a database file.

### > Step 1

The calibration coefficients read back can be saved to an existing database or a new database.

Shown in Fig.5-84 and Fig.5-85 are the pages for saving coefficients to an existing database and a

new database respectively.

⊙ Save to an Exi	isting Database	🔘 Save to a New Dat	tabase			
Select Database:					Open	
Туре:	Unknown	Existing Cabine	t ID:	$\vee$		
Columns:	Unknown	Rows:	Unknown			
Discription:	Unknown					

Fig. 5-85 The page for saving calibration coefficients to an existing database

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#### Open

Click this button to open an existing database to save the read back calibration coefficients. The new saved coefficients will replace the old ones according to the position. If the coefficients array size of the opened database is smaller than that of the current display, the save operation will be failed. If the opened is a cabinet database, the ID list of the existing cabinets of the database will

be shown.

	~				
New Database Type	e: 💿 Scree:	n-Database 🔘	Cabinet-Database		
Select Database:				Create	
Туре:	Unknown	Existing Cab	inet ID:		
Columns:	Unknown	Rows:	Unknown		
Discription:	Unknown				

Fig. 5-86 The page for saving calibration coefficients to a new database

### Screen-Database

Select this option if it is to save the calibration coefficients to a new screen database.

### **Cabinet-Database**

Select this option if it is to save the calibration coefficients to a new cabinet database.

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### Create

Click this button to create a new screen database or a cabinet database according to the settings.

### Note:

### 1. Screen database

In a screen database, the saved are the calibration coefficients and the positions of they are to be uploaded to in the LED lights array of the whole display. In the uploading procedure, the coefficients are uploaded according to the positions set for them. Thus if the position of a cabinet is changed, the coefficients for this cabinet will not be correctly uploaded.

2. Cabinet database

In a cabinet database, the calibration coefficients are arranged in the form of cabinets. The coefficients for the same cabinets are grouped together and labeled with the cabinet ID. Thus even the place of a cabinet has been changed, the corresponding coefficients can also be correctly uploaded to the cabinet.

### > Step 2

Select the display area for which the calibration coefficients are to be saved to a database. Shown in Fig.5-87 is the page for Step 2.

<b>reen:1 Locat</b>	i <b>on:X=0, Y=0</b> Si el		🗌 Select Area On	Screen
(1, 1)	(1, 2)	(1, 3)	(1, 4)	Zoom:
(2, 1)	(2, 2)	(2, 3)	(2, 4)	1.0

Fig. 5-87 The page for specifying the display area for coefficients saving

#### Screen

A)STAR

Check this option if the calibration coefficients for the whole display are to be saved. If the database for saving the coefficients is a cabinet database, this option will be unavailable.

#### Pixel

Check this option to select the pixel area for which the calibration are to be saved. If the database for saving the coefficients is a cabinet database, this option will be unavailable.

### **Topology or List**

Check this option to select the cabinets for which the calibration coefficients are to be saved.

Note that if the database for saving the coefficients is a cabinet database, one cabinet should be

selected at one time for coefficients saving.

#### Save

Click this button to save the calibration coefficients of the selected display area to the specified

database. If the database for saving the coefficients is a cabinet database, a dialog will appear for users to input the cabinet ID.

**Maintain** (Only full-screen support): The software saves by cabinet, supports maintaining, namely when network or other problems occur and cause saving suspended, select maintain to continue saving from the cabinet having error.

### 5.8.2.3 Set coefficients for a new scan board

### > Step 1

Specify the LED display area that the new receiver card (scan board) works for. Shown in

Fig.5-88is the page for specifying the area.

elect Area of New Sca	an Board in Screen ——				
Screen:1 Locati	.on:X=0, Y=0 Si	ze:512♥×256H logy or List	Select Area On :	Screen	
(1, 1)	(1, 2)	(1, 3)	(1, 4)		Zoom:
(2, 1)	(2, 2)	(2, 3)	(2, 4)		1.0
			Ba	ack Next	Return

Fig. 5-88 The page for specifying the working area of the new receiver card

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### > Step 2

Select the calibration coefficient source. The coefficients could be from a database (the **Database** option) or generated according to those of the surrounding receiver cards (the **Refer to Surrounding Scan Board** option). Fig.5-89 and Fig.5-90 show the pages for two option

🖲 Database	Coefficients	Surrounding Scan Board			
Gelect Database:				Browse	
∫уре∶	Unknown	Cabinet ID:	~		
olumns:	Unknown	Rows:	Unknown		
liscription:	Unknown				

Fig. 5-89 The page for getting calibration coefficients from a database

#### Browse

Click this button to select the database that the calibration coefficients for the new receiver card

are from. If the selected is a cabinet database, the cabinet ID should also be specified from the

Cabinet ID drop list.

### **Cabinet ID**

If the selected database is a cabinet database, the IDs of the cabinets of which the calibration



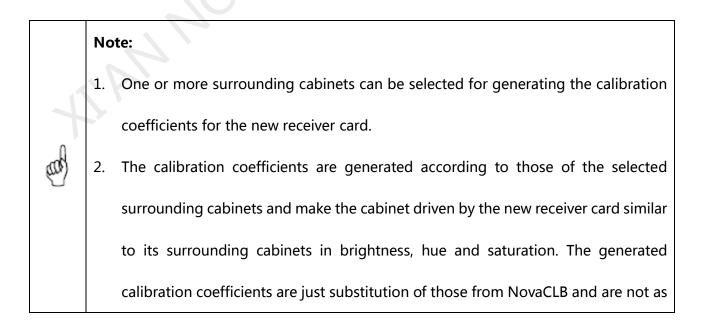
coefficients are contained in the database will be list in the drop list. If the selected database is a

screen database, the list will be unavailable.

	efficients -
🔘 Database	🛞 Refer to Surrounding Scan Board
Select Reference Cabine	
Reference Zone:	
Adjusted Cabinet:	Reference Cabinet:
	4 Multiverse
	Back Next Return

Fig. 5-90 The page for generating coefficients for the new receiver card according to those of its surrounding

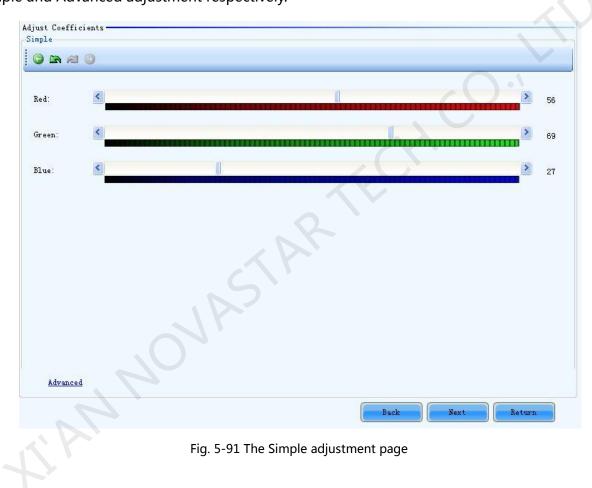
receiver cards



good as those from NovaCLB in performance.

### > Step 3

If the calibration coefficients from Step 2 are not satisfying, they can be adjusted. There are two type of adjustment, Simple and Advanced. Shown in Fig.5-91 and Fig.5-92 are the pages for Simple and Advanced adjustment respectively.



### Red

Use the slide bar to adjust the red brightness of the calibration coefficients.

### Green

Use the slide bar to adjust the green brightness of the calibration coefficients.

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### Blue

Use the slide bar to adjust the blue brightness of the calibration coefficients.

### Advanced

Click this item to switch to the advanced adjustment page.

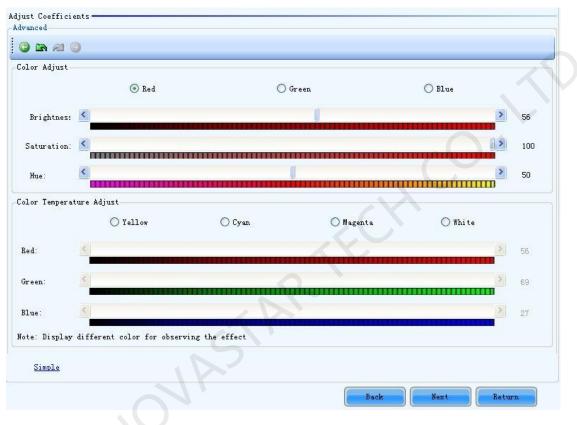


Fig. 5-92 The Advanced adjustment page

### **Color Adjustment**

The brightness, hue and saturation of red, green and blue can be adjusted in the Color Adjust

panel.

### **Color Temperature Adjustment**

Use the slide bars to adjust the red, green and blue components for yellow, cyan, magenta and

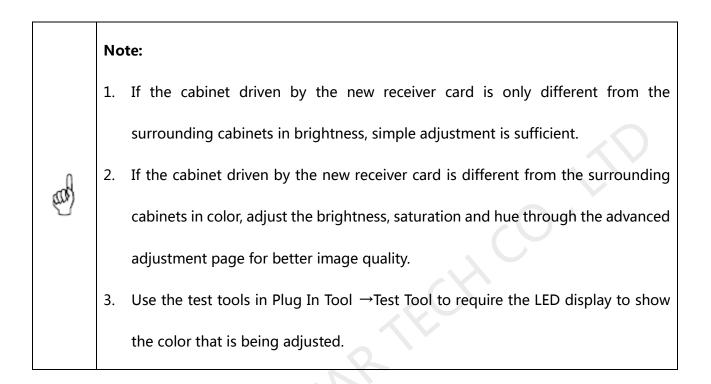
white in the Color Temperature Adjust panel.

### Simple

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Click this item to switch to the simple adjustment page.

The color bar under each side bar indicates the color to be shown when adjusting.



### > Step 4

Save the calibration coefficients to the hardware (FLASH) so they won't be lost when the LED display is powered off. Shown in Fig.5-93 is the page for saving the coefficients to the hardware. Click the Save button to save the coefficients to the hardware.



Fig. 5-93 The page for saving calibration coefficients to the hardware

## 5.8.2.4 Set coefficients for a new module

### > Step 1

Specify the cabinet which the new module is in. this can be done through the page shown in

Fig.5-94.

creen:1	Locati	ion:X=0,	¥=0 Si	ze:256 <b>¥</b> ×128H			
🔿 Screen	O Pixe	1	💿 Topo	logy or List	🗌 Select Area On Scre	en	
(1, 1)	(1,2)	(1, 3)	(1,4)				Zoom:
(2, 1)	(2, 2)	(2, 3)	(2, 4)				-
							1.0
							) • \

Fig. 5-94 The page for specifying the cabinet the new module is in

### > Step 2

VA)STAR

Double click the selected cabinet to open the page for specifying the new module. Shown in

Fig.5-95 is the page for specifying the new module.

Scan Bo.: (0,0,0), Loo Screen Pixel	Topology or List	64×64	creen	
Module Size: 16 📚 x Display Mode: 💿 Modules	O Pixels			
	2	3	4	
2				
3	Row:2 Col:2			
4				
<				

Fig. 5-95 The page for specifying the new module

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### **Module Size**

Set the pixel array size of a module here. NovaLCT-Mars divides a cabinet into modules according

to the module pixel array size and the cabinet pixel array size.

> Step 3

Select the calibration coefficients source. Calibration coefficients generated according to those of

the surrounding modules are used for the new module because the coefficients saved in the

receiver card or the database are not suitable for the new module. Shown in Fig.5-96 is the page

for selecting the coefficients source.

Select the source of Coefficien Refer to Surrounding Mode Select Reference Module		
Reference Zone: 📄 [ Adjusted Module:	Reference Module:	TEC'
0		
NN		

Fig. 5-96 The page for selecting the calibration coefficients source

	No	te:										
æ	1.	One	or	more	surrounding	modules	can	be	selected	for	generating	the
		calib	ratic	on coef	ficients for the	e new moo	lule.					



2. The calibration coefficients are generated according to those of the selected surrounding modules and make the pixel array driven by the new module card similar to its surrounding in brightness, hue and saturation. The generated calibration coefficients are just substitution of those from NovaCLB and are not as good as those from NovaCLB in performance.

### > Step 4

Adjust the calibration coefficients if the generated coefficients are not satisfying. The adjustment page is similar to that for a new receiver card. Please refer to <u>5.8.2.3 Set coefficients for a new scan</u> <u>board ->Step 3</u> for more details.

### > Step 5

Save the calibration coefficients to the hardware (FLASH) so they won' t be lost when the LED display is powered off. The operation is similar to that for a new receiver card. Please refer to 5.8.2.3 Set coefficients for a new scan board ->Step 4 for more details.

### 5.8.2.5 Adjust Coefficients

If some parts of the LED display are different from the rest in color, the color of these areas can be adjusted by modifying the corresponding calibration coefficients.

### > Step 1

Select the areas to be adjusted. Fig.5-97 shows the page for area selecting.

Screen:1	Locatio	on:X=100,	¥=100	Size:256¥×	(128H		
🔿 Screen	🔿 Pixel		💽 Topo	logy or List	✓ Select Area (	In Screen	
(1, 1)	(1,2)	(1, 3)	(1,4)				Zoom:
(2, 1)	(2, 2)	(2, 3)	(2,4)				
×.							1.0
							• 1

Fig. 5-97 The page for selecting the area to be adjusted

#### > Step 2

VOVA)STAR

Select the adjustment type. If Adjust Own Effect option is selected, the color adjustment of selected area is independent to the other areas of the LED display. If Effect As Other Selected Area option is selected, the color of the selected area will be adjusted according to the reference area color. The selected area color will look similar to the reference area color after the adjustment operation. Shown in Fig.5-98 and Fig.5-99 are the page for the two adjustment type respectively.



Fig. 5-98 The page for Adjust Own Effect option

Screen:1	Locati	on:X=100	, <b>Y</b> =100	Size:256W>	×128H			
🔿 Screen	🔘 Pixel		💽 Торо	logy or List	Select	Area On Scr	een	
(1, 1)	(1,2)	(1, 3)	(1,4)					Zoon
(2, 1)	(2, 2)	(2, 3)	(2,4)					,
· P								1.1

Fig. 5-99 The page for Effect As Other Selected Area

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### Note:

If Adjust Own Effect option is selected, NovaLCT-Mars will acquire the calibration coefficients of the selected area for the hardware. Adjustment on these coefficients is independent to the other area of the LED display.
 If Effect As Other Selected Area is selected, NovaLCT-Mars will adjust the calibration coefficients of the selected area according to those of the reference areas and make the selected area looks similar to the reference areas in color. The nearer the reference areas are to the area being adjusted, the better the adjustment result will be.

### > Step 3

Adjust the calibration coefficients. This step is similar to that for a new receiver card. Please refer

to 5.8.2.3 Set coefficients for a new scan board -> Step 3 for more details.

### > Step 4

Click the **Save** button to save the adjusted calibration coefficients to the hardware. The save coefficients won' t be lost even the system is powered off. Shown in Fig.5-100 is the page for saving the calibration coefficients.





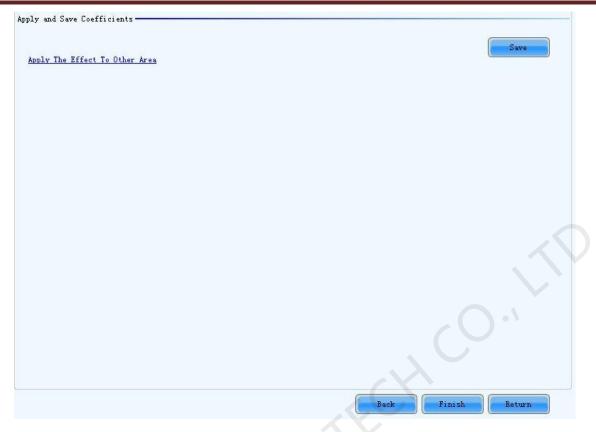


Fig. 5-100 The page to save the calibration coefficients

The adjustment operations in Step 2 and Step 3 can also be applied to other areas that need the same adjustment. Click **Apply The Effect To Other Area** item on Fig.5-100 to open the page for setting. Shown in Fig.5-101 is the page for Apply The Effect To Other Area.



	ve Coefficients				(	Save
	fect to Other Area	Size:256¥×1	288			
⊙ Screen	⊖ Fixel	gy or List	Select Area	0n Screen		
		Operate	e all pixels!			
					0	•1
				Back	Finish	Apply Return

Fig. 5-101 The page for Apply The Effect To Other area

### Apply

Apply adjustment operations to the selected area.

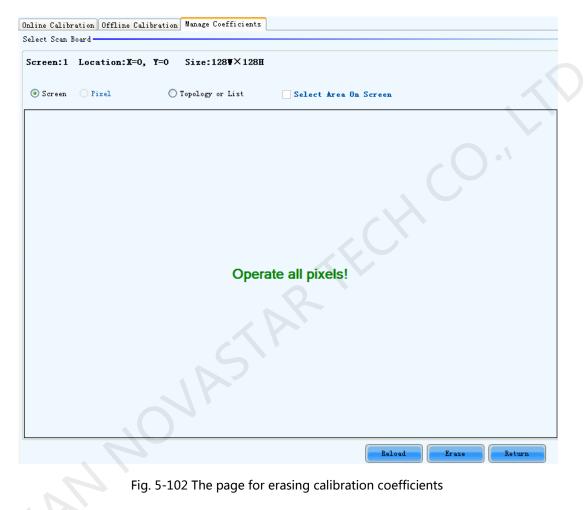
	Note:
	1. If the adjustment operations are to be applied to another area, the problem of
A	this area should be similar to the area selected in Step 1. Otherwise, don' t
and	apply the operations to this area.
	2. If the adjustment result of the new area is satisfying after applying the
	operations, click <b>Save</b> button again to save the adjusted calibration coefficients
	to the hardware.

### 5.8.2.6 Erase or reload Coefficients

Shown in Fig.5-102 is the page for erasing/reload calibration coefficients.

Erase coefficients: erasing calibration coefficients of the whole display or any cabinets.

Reload coefficients: reload the calibration coefficients lastly saved in hardware.



### Screen

Select this option to erase all calibration coefficients for the whole display.

### **Topology or List**

Select this option to select the cabinets from the cabinet array sketch or the cabinet list of which

the calibration coefficients are to be erased.

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### Note:

The calibration coefficients will be their default values after the erase operation. Make

a copy of the calibration coefficients (save to a database file) for safety.

# 5.8.3 Reset coefficients

Reset correction coefficients of the full screen or the specified area in accordance with the size of

light panel or pixel.

Complete all operation of reset coefficient, click on the "Save To HW", The correction coefficient

reset will be effective.

Screen Calibration	And one of the local division of the local d				×
Current operation	Online Calibration Offline Calib Choose to re set the coeffici				
COM3 *		:X=0, Y=0 Size:32W	× 16H		
Current Screen					
Screen1	Screen OPixel	Topology or List	Selec Scree	t Area On n	
		Set Coefficients		×	
		2047	0	0	
	14	0	2047	0	
		0	0	2047	
		OK		Cancel	
Enable/Disnable Calibraion Disable					
(The Save				ReSet Coeffici. Sav	e To HW



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# 5.9 Function Card Management

Management operations of the function card (also named multifunction card), such function card configuration, program loading, external device configuration, monitored data updating and power supply management, will be given in this section.

Shown in Fig.5-104 is the Function Card Management page when it is opened for the first time.

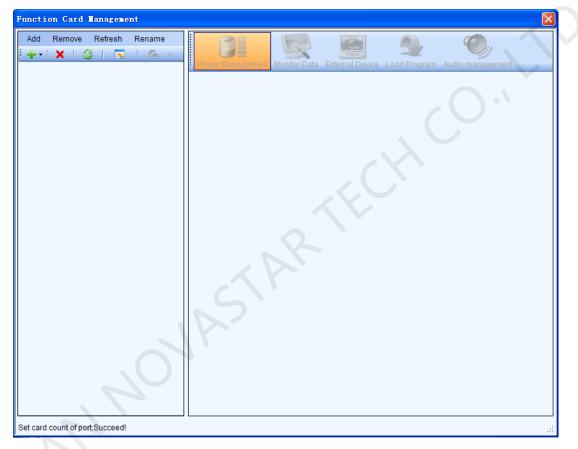


Fig. 5-104 The Function Card Management page

# 5.9.1 Function Card Configuration

Use the menu or tool bar in the panel on the left of the Function Card Management page to

configure the function card.

### Add

> Serial Port--- add a function card which is connected to a serial port of the computer.



Ethernet Port--- add a function card which is connected to a Ethernet port of the sending board (controller).

#### Remove

This is to remove the selected node. The selected node could be a function card, Ethernet port, sending board or a serial port.

#### Rename

This is to rename the selected function card.

### **Serial port Operation**

The corresponding menu item and tool bar button are only available when the following requirements are satisfied: The selected node is a serial port; the device connected to the serial port does not match the device type of the serial port or the serial port is disconnected.

- Modify Serial Port--- set the selected serial port as one that no function card has been configured for it.
- Replace Serial Port--- when the function card of the selected node is connected to a serial port other than that of the selected node, click this button to replace the selected node serial port with the one that is connected with the function card.

# 5.9.2 Power Management

Click the **Power Management** button on the **Function Card Management** page to open the page for power management. The Power Management page is shown in Fig.5-105. Circled in the page is the **Power Management** button.

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Power Management	Monitor Data External	Device Load Program Audio m	anagement	
2013-02-20 Wednes	sdav 10:10: Read	Set Set Notes	Start Delay	
• • • •		Refresh Start All	Emergency St	
Manual	O Auto	Software Control		
Switch 1: Start	Stop			
Switch 2: Start	Stop			
Switch 3: Start	Stop			
Switch 4: Start	Stop			
Switch 5: Start	Stop			
Switch 6: Start	Stop			
Switch 7: Start	Stop			
Switch 8: Start	Stop			
2013-2-20 10:11:28R	ead the status of all the	powers in function card:Succeed	~	
2013-2-20 10:11:31St	tart power:Succeed			
2013-2-20 10:11:33R	ead the status of all the	powers in function card:Succeed		
:Succeed!		K	.:	

Fig. 5-105 The page for power management

### Function Card Time panel

- **Read** --- to read the time from the function card and show in this panel.
- Set --- to set the function card time as that of the computer.

### Set Notes

Set note for each of the power supply of the current function card.

### Start Delay

Set the delay time for starting power. If the delay time is successfully set, the stating of each of

the power supply control by the function card will be delay for the delay time. For example, if the

delay time is set as 2 seconds, then each power supply will delay 2 seconds when starts.



#### Refresh

This button is to refresh the power management information, including the power control mode (manual, auto or software control), the power supply status (start or stop), the function card time and the delay time.

### Start All

This button is to start all power supplies controlled by the function card.

#### **Emergency Stop**

Click this button to stop all power supplied controlled by the function card. For power supplies under auto control, their schedules will be disabled when the emergency stop operation is executed. The schedules won' t be enabled until **Start All** button is clicked.

#### Manual

This is to set the power control into manual control mode. Use the Start button or the Stop button to start or stop the corresponding power.

#### Auto

This is to set the power control into auto control mode. The hardware system will start or stop the power supplies according to the schedule automatically. The schedule can be set and send to the hardware through NovaLCT-Mars.

#### Software Control

In this mode, NovaLCT-Mars controls the power supplies according to the schedule set for the power supplies.

### 5.9.2.1 Manual Power Control

Select the Manual option to set the power supply control mode in to manual mode. And the



power supplies of the function card can be controlled through the corresponding Start button or

Stop button.

### 5.9.2.2 Automatic Power Control

Function Card Time Set Notes Start Delay Read Set 2012-04-17 Tuesday 18:30:23 Refresh Start All mergency Sto ( Auto O Manual 🔘 Software Control Start Stop Switch 1: 10:51:30 😂 13:52:30 💲 Switch 2: 13:51:30 😂 13:52:30 😂 Switch 3: 13:51:30 拿 13:52:30 😂 13:51:30 😂 13:52:30 😂 Switch 4: Switch 5: 13:51:30 😂 13:52:30 😂 Switch 6: 13:51:30 拿 13:52:30 😂 Switch 7: 13:51:30 😂 13:52:30 😂 Switch 8: 13:51:30 😂 13:52:30 😂

The page for automatic power control is as shown in Fig.5-106.

Fig. 5-106 The page for automatic power control

Select the Auto option to set the power control mode into auto control mode. The time for start or stop each power supply can be set through this page. Click **Send** button to send the schedule to the hardware. And the hardware system will automatically start or stop the power supplies according to the schedule.

	No	ote:
	1.	In Auto mode, the schedule will be disabled if the <b>Emergency Stop</b> button is
aab		clicked. The schedule won't be enabled until the <b>Start All</b> button is clicked.
	2.	The time standard for automatic power control is the function card time. Check
		the function card time before setting the schedule for auto power control. To

check the function card time, click **Read** button in the **Function Card Time** panel. To set the function card time, click Set button and the function card time will be set the same as that of the computer.

### 5.9.2.3 Software Power Control

The page for software power control is as shown in Fig.5-107.

•••	• • •	• • •			mergency Stop
	nual ntrol List	O Auto C	⊙ Software Contr	01	()
Week	Start Time	Close Time			
Power S	Switch:1				
Friday	17:34:03	18:34:03			
Power S	Switch:2				
Friday	17:34:03	18:34:03			
Power S	Switch:8				
Friday	17:34:03	18:34:03			

Fig. 5-107 The page for software power control

# Сору

To copy the power control schedule of the current function card so it can be applied to other

function cards by pasting.

### Paste

To paste the copied power control schedule to the current function card.

### **View Log**

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Click this button to check the log of the control operations on the power supplies. Shown in

Fig.5-108 is the page of View Log.

g Information	Mond 🖌				
Address	Operation Type	Power Switch	Operation Time	Operation Result	
COM6-Sending Board 1-Port 1-	Stop	1	10:15:00	Succeed	
	Stop	2	10:15:00	Succeed	
	Stop	3	10:15:00	Succeed	
	Stop	4	10:15:00	Succeed	
	Stop	5	10:15:00	Succeed	Z
	Stop	6	10:15:00	Succeed	
	Stop	7	10:15:00	Succeed	
	Stop	8	10:15:00	Succeed	
				у сО.'	

Fig. 5-108 The View Log page

> Select the Log File --- select the date of the log to be checked here.

To check the power control log, select the date of the log to be checked in the box labeled Select

the Log File and select the function card to be checked form the function card list (the Address

list) at the left of the page. The detail of power supply control will be shown in the panel at the

right of the page.

### Edit

Click this button to open the page for editing the power supply control schedule. Shown in Fig.5-109 is the page for editing the schedule.

ustom Control List of power	Custom Edit Area Poger Switch
Week Start Time Close Time	Switch 1 Switch 2 Switch 3 Switch 4 Switch 5 Switch 6 Switch 7 Switch 8
Friday 17:34:03 18:34:03 Power Switch:2	Date Tues.
riday 17:34:03 18:34:03	☐ Thur. ☐ Fri. ☐ Sat. Sun.
Friday 17:34:03 18:34:03	Time Start Time: 09:02:15 Close Time: 09:02:15 Add

Fig. 5-109 the Power Custom List

- > Delete --- click this button to delete the selected items in the Custom Edit Area.
- > **Clear** --- click this button to clear all existing settings.
- Power Switch --- listed in the panel are the power supplies controlled by the function card.
   Select the one to be edited here.
- > **Date** --- select the days for power control in this panel.
- > **Time** --- set the time for star and stop the power in this panel.
- Add --- click this button to add the settings in the Custom Edit Area to the Custom Control List of Power.

# Note:

The time standard for the software control mode is the time of the computer on which NovaLCT-Mars is running.



# 5.9.3 Monitor Data

### Click Monitor Data button on the Function Card Management page to open the page for

system monitoring. Show in Fig.5-110 is the page for system monitoring.

Power Management	Monitor Data	External Device	Load Program	Audio management		
-Monitor Data of Func	tion Card —					
Temperatu	29°C					
📌 Humiditv:	29%					
Voltage:	4.2V					
No monitor board!						
				F	Refresh	

Fig. 5-110 The page for system monitoring

### Refresh

Click this button to acquire the monitored data from the current function card and the monitor

board that connected to the current function card.

# 5.9.4 External Device

Click the External Device button on the Function Card Management page to open the page for

external devices management. Shown in Fig.5-111 is the page of External Device.

#### Refresh

This is to refresh the information of the external devices.

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#### Save

Click this button to save the external device type settings to a file. The **Save** button must be clicked after any modifying of the external device type settings.

	itor Data External Device Load Program Audio management click 'Save' button after modify!	
External device 1:	Light Sensor	
External device 2:	Light Sensor 🗸	
External device 3:	No External Device 🗸	
External device 4:	No External Device 🗸	
External device 5:	No External Device 🗸	
External device 6:	No External Device	
	Refresh Save	

Fig. 5-111 The page for external devices management

# 5.9.5 Load Program

Click the Load Program button on the Function Card Management page to open the page for

loading program to the hardware. Shown in Fig.5-112 is the page of program loading.



Po	wer Management	Monitor Data	External Device	Load Program	Audio managem	nent
Fu	nction Card Inform	ation				
Мо	del ID:	81.01	1			
FP	GA Version:	03.03	2 00 02			
FF	PGA Note:	多功	能卡App程序 版本	号V3.2.0.2		Refresh
		Fig. 5-112	2 The page for	program load	ding	

#### Refresh

Click this button to acquire the version information of the current function card.

Type in admin directly to access the options for program loading. Shown in Fig.5-113 is the page

with the program loading options.

Power Management Mo	nitor Data External Device Load Program Audio management
Function Card Informatio	1
Model ID:	81 01
FPGA Version:	03 02 00 02
FPGA Note:	多功能卡App程序 版本号V3.2.0.2
	Refret
<ul> <li>Load program for sel card(COM17)</li> </ul>	ected function O Load program for all function card
Select Program	
Program Name:	
Program Version:	
Program Pat	
	Chang

Fig. 5-113 The page with program loading options

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#### Exit

Click this button to go back to the page shown in Fig.5-112.

#### Load program for selected function card

Select this option to load program to the current function card.

#### Load program for all function card

Select this option to load program to all function cards.

#### Program Path

Select the program to be loaded here.

#### Change

Click this button to load the selected program to the current function card or all function cards.

# Note:

1. There isn' t any place to view the typing when typing the pass code. Just type in the pass code directly and the page shown in Fig.5-112 will change to the one

shown in Fig.5-113.

- 2. Just type in the pass code again if the one input before is wrong.
- 3. It not recommended changing the program unless there are problems with the function cards.

### 5.10 Cabinet Library Management

This is to manage the existing cabinet libraries or creating new cabinet libraries. It helps in quick configuration of the cabinets and modules.

#### Step 1

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Click **Tool** ->**Cabinet** Library to open the page for library management. If it is the first time to

open the page, the dialog as shown in Fig.5-114 will appear for open or create a library.

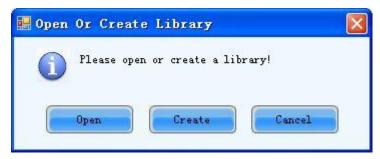


Fig. 5-114 The dialog for opening or creating a library

#### Open

Click this button to open an existing library.

#### Create

Click this button to create a new library.

> Step 2

#### 1) Module Management

Shown in Fig.5-115 is the page for module management.

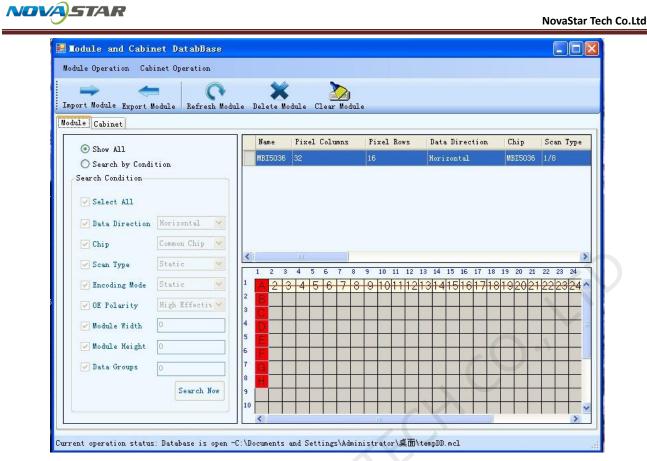


Fig. 5-115 The page for module management

#### **Import Module**

Click this button to import the module configuration files generated during the Smart Setting

procedure to a cabinet library.

#### **Export Module**

Click this button to export the module configurations from a cabinet library to a module

configuration file. Module configuration files help in speeding up the Smart Setting procedure.

#### Show All

Select this option to request NovaLCT-Mars to show module configurations of all cabinets in the

list.

#### **Search by Condition**

Select this option to shown all module configurations that meet the requirements set in the



Search Condition panel in the list.

#### 2) Cabinet Management

Shown in Fig.5-116 is the page for cabinet management.

ort Cabinet Export Cabinet   Refresh Ca le Cabinet				 
Show All	Name C	Cabinet Type	Cabinet Width	
O Search by Condition				
Search Condition				
🔿 Regular Cabinet				
🔿 Irregular Cabinet				1.1
Select All				
Cabinet Width				
Cascade Right to Lef				
Council New				
Sear Cit Now				
<ul> <li>✓ Cabinet Hight</li> <li>✓ Module Cascade</li> <li>✓ Right to Lef: ✓</li> <li>✓ Search Now</li> </ul>				
Search Now				

Fig. 5-116 The page for cabinet management

#### **Import Cabinet**

Click this button to import a cabinet configuration file to a cabinet library.

#### **Export Cabinet**

Click this button to export the cabinet configurations from a cabinet library to a cabinet

configuration file.

#### Show All

Select this option to shown in the list all cabinets' configurations in the library.

#### Search by Condition

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Select this option to shown the configurations of the cabinets that meet the requirements set in

the Search Condition panel in the list.

### 5.11 **Prestore Picture**

User can store a picture as the screen' s prestore picture in the Prestore Picture Setting form,

and then use as boot logo, cable disconnected logo, and no DVI signal logo.

Click the submenu **Prestore Picture** of the **Tools** in the main menu, and then it is show as follow:

	Prestore Picture Settings
	Select Serial Port
	Serial Port: COM3 💌
	Screenl
	Prestore Picture Settings
	Select Picture: Browse
	Effect Settings
	⊙ Screen Effect Stretch ✓
	O Cabinet Effect Stretch Test Effect
	Save To Hardware Check Store Picture
	-Function Settings
	Boot Screen
	Enable Time: 2 😴 5
	Cable Disconnect
	⊙ Black ○ Last Frame ○ Prestore Ficture
	No DVI Signal
r 1	● Black ○ Last Frame ○ Prestore         Picture         Picture
	Send Save To Hardware

Fig. 5-117 Prestore Picture Setting

#### 1) Prestore Picture Setting

**Browse:** Select the picture' s path of prestore picture.

Screen Effect: The selected picture will be stretched, tiled or centered to the screen. (Each

cabinet will show part of this picture, and they matching to be the whole picture)

**Cabinet Effect:** The selected picture will be stretched, tiled or centered to each cabinet of the screen. (Each cabinet will show this picture in its own region).

Test Effect: Show the selected picture on the screen. (This operation will not save the picture to

the hardware.)

Save To Hardware: User can click this button to save the picture as prestore picture to the

hardware if he is satisfied with the test effect.

Check Store Picture: In order to check the stored effect, click this button to show the prestore

picture which was stored in the hardware on the screen.

#### 2) Function Settings

**Boot Screen:** User can set whether enable boot screen or not and the boot screen time when power on. The prestore picture is used as the boot screen.

Cable Disconnect: User can select the display frame when cable disconnect.

No DVI Signal: User can select the display frame when there is no DVI signal.

Send: Send the settings to the hardware. (If Save to Hardware is not clicked, the settings will lost

after power off.)

**Save To Hardware:** Save current settings to hardware, then the settings will not lost after power off.

### 5.12 Color Restore

Color restore is mainly aimed to solve and adapt to the gamut conversion at a different standard.

Interface "**Tools**"  $\rightarrow$  "**Color Restore**" to enter the interface color restore, as shown below:

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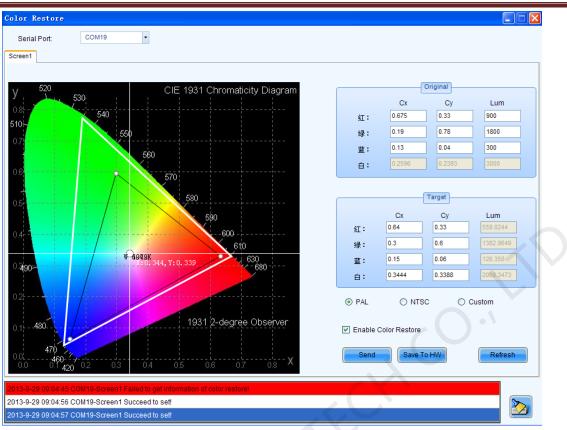


Fig. 5-118 Change the color temperature of the white point

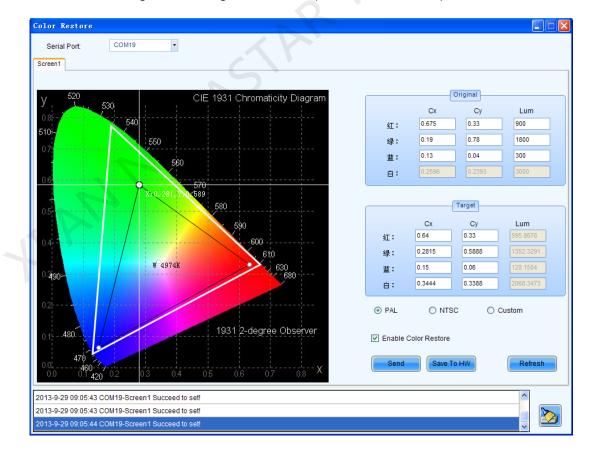


Fig. 5-119 Change the scope of the color gamut

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#### **Obtain original color gamut**

The light gun is recommended to obtain the current color gamut, or the Original Color Gamut.

The accurate original color gamut could facilitate the adjustment of the target color gamut.

1) Adjust the target color gamut

If the original color gamut is accurate, it could be directly transformed into the PAL or NTSC standard target color gamut, or the four color target points could be dragged to change the scope of the color gamut and the color temperature of the white point. See Fig.5-118 and 5-119. Click the lift button of the mouse and drag, or directly enter the parameters. The display effect could be reviewed in real time after the adjustment.

- 2) Check the "Enable Color Restore" .
- 3) Click "**Send**" to send the information to the hardware.
- 4) Click "**Save to HW**", and parameters can be saved to the hardware, which cannot be lost in

case of power failure.

# 6 Memory On Module Manage

Click the option "Memory On Module Manage" in Tools, and open the light panel Flash

operation interface, as you can see in the figure:

0 NovaLCT-N	1ars V4.2.5	S2 T2		100	507 464	
System(S)	Tools(C)	Plug-in Tool(P)	User(U)	Language(Lang)(L	.) Help(H)	
Screen Conf	Brigh Calib	en Config(S) Itness(B) Iration(C) Iay Control(P)		itor	Function Card	
Control Sy	Moni Func	tor(M) tion Card(F) ware Information(H	)	mown	View Detail	
	Error Pres	ple Screen Manage Dot Detect(T) tore Picture(R) r Restore(O)	ment(A)		<b>∳</b> 3∎ ● ●	
Server Status:	Rece	ory On Module Man vive Card relay(I) Batch of Adgustmer	2			.::
	Load	Configuration File	(E)	cabinet		

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🖳 Memory On Module	Manage
Serial Port: CC	DM3 -
	Ву Тороlору
- Select Screen	Screen:1 Location:X=0, Y=0 Size:384W×128H
Screen1	
Screen2 Screen3	Screen Pixel O Topology Or List Screen On Screen
Screens	
	Operate all pixels!
Check coefficients in	Scan Check coefficients in Modul Save coefficients on Scan Save coefficients to Modules Flash Check
Check coefficients in	Scan Check coefficients in Modul Save coefficients on Scan Save coefficients to Modules Flash Check

Fig. 6-1 Light panel Flash operation interface

**Serial Port :** Serial port of currently connected sending equipment.

Send by Address : Double-click the corresponding table, and set the physical address; the

description is shown as follows:

Sending#	Port	Scan board	Means
1	*	*	Means all the Scan boards of the first sending board .
	1	*	Means all the scan boards of the first port in the first
	Ţ		sending board.
1	1	1	Means the first scan board of the first port in the first
	Ţ	L	sending board.

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•	Mem	ory On Module Manage		<u> </u>
	Se	rial Port: COM3 -		
	Send B	y Address Send By Topolopy		
		Sending#	Port	Scan Bo.
		1	1	1
		1	1	2
		1	1	3
	۲.	1	2	*
	*			
		x start from 1, * * means 'all' (F ne position of scan board is:1-*-*,it means	lash Check no support '*'). all the scan boards of the first sending board;	
	2.lf tł	ne position of scan board is:1-1-*,it mean:	s all the scan boards of the first port in the first se	ending board;
	3.lfth	ne position of scan board is:1-1-1, it mear	is the first scan board of the first port in the first s	ending board;
	Che	ck coefficients in Scan Check coefficie	nts in Modul Save coefficients on Scan Sav	ve coefficients to Modules Flash Check

Fig. 6-2 Send by address

Send by topology: Select the receiving card in accordance with the topology; select the full

screen (i.e., all connected receiving card), or select one or more receiving cards in accordance with the arrangement diagram.



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🖳 Memory On Module	e Manage
Serial Port:	OM3 -
	Ву Тороюру
- Select Screen	Screen:1 Location:X=0, Y=0 Size:384W×128H
Screen1 Screen2 Screen3	Screen Pixel Topology Or List Screen
	Operate all pixels!
Check coefficients in	Scan Check coefficients in Modul Save coefficients on Scan Save coefficients to Modules Flash Check

Fig. 6-3 Send by Topology

Check coefficients in Scan Board : Check the effect of calibration coefficient saved in receiving

card at LED screen.

Check coefficients in Modules : Check the effect of calibration coefficient saved in light panel

Flash at LED screen.

Save coefficients on Scan Board : Save the calibration coefficient currently being checked to

receiving card.

Save coefficients to Modules : Save the calibration coefficient currently being checked to light

panel Flash.

Flash test: test whether Flash is normal.

Types of error in Flash test and its reasons:

- 1) Hardware failure;
  - a) It may be caused by the screen inconsistent with the actual situation;
  - b) It may be caused by the configuration of arrangement diagram inconsistent with the actual situation.
- 2) Communication error: it may be caused by a hardware connection error.
- 3) Abnormal Flash arrangement: no configuration of Flash arrangement, or no hardware;

Flash arrangement embodies physical connections of all Flashes, and it needs to be configured in

Serial F	Port: COM	3	•						
r	Verify Result				2			×	
end By A Select S	Sending Board	Port	Scan Board	Flash X	Flash Y	Flash Width	Flash Height	ErrorType	
	1	1	1	0	0	0	0	Flash Topolog	
Screet Screet	1	1	2	128	0	0	0	Flash Topolog	
Screet	1	1	3	256	0	0	0	Flash Topolog	
4	A	N						OK	

the "Display Configuration". Please see the specific operation.

Fig. 6-4 Flash check

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### 7 Multi Batch Adjustment

Quickly adjust the chromaticity of each batch of cabinet to achieve the effect of reference model.

After adjusting well, save the adjustment parameter into a file; next time, load the file to finish

adjustment quickly without manual adjustment.

In the main interface, click "Tools"  $\rightarrow$  "MultiBatch of Adjustment", start multibatch adjustment.

The operation steps are as follows:

🖸 NovaLCT-N	Nars V4.2.5 S2 T2	
System(S) Screen Conf Local System Control Sy Monitor Info	Display Control(P) Monitor(M)	ang)(L) Help(H) itor Function Card mown View Detail
Server Status:	Receive Card relay(I)	
	MultiBatch of Adgustment(M) Load Configuration File(E)	
	Dark or Bright Line Adjustment for Cabinet	

Fig. 7-1 Multi Batch Adjustment

# 7.1 Applications Adjustment File

1) Directly load the adjustment file previously saved, as shown in Figure 7-2.

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Iultiple batch control		
Type of Operation		
🥅 Manual	adjustment	📝 Applications Adjustment File
File Path:		
Please adjust the load multiple b file on completion of adjustment, the effect quickly applied to otb	atches to save the	Next step

Fig. 7-2 Applications Adjustment File

2) Select the batch, then click dding region, and add the region of the same batch on the screen; preview to check the adjustment effect; if the effect is Ok, click "Apply" and apply the adjustment effect to the screen.

Solidify: Solidify the adjustment effect to the hardware.

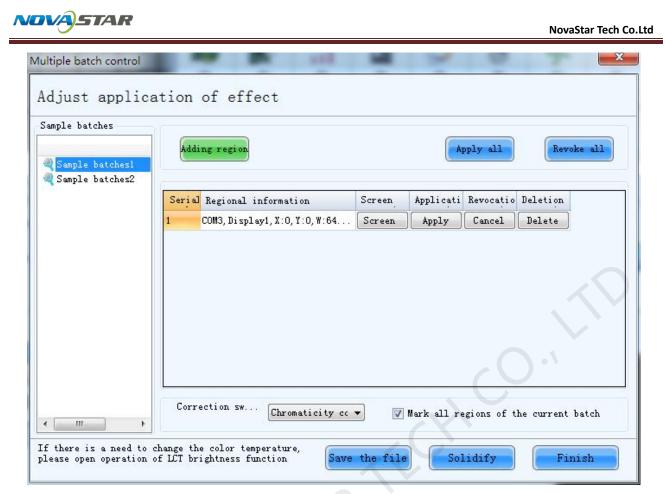


Fig. 7-3 Application of adjustment effect (use the adjustment file)

### 7.2 Manual adjustment

 Check "Manual adjustment" if not using the adjustment file, as shown in Figure 7-4.Select a colorimeter connected to the system. If the system does not connect with the colorimeter, tick "Ne colorimeter" and then aligh "Next".

tick "No colorimeter" and then click "Next".



Multiple batch control	×
Type of Operation	
📝 Manual adjustmen	nt 🦳 Applications Adjustment File
Ommonly used colorimeter	⊙ Other colorimeter ⊙ No colorimeter
Select colorimeter:	Minolta CS2000 -
Using a colorimeter aided adjustment, the ad quicker.	djustment Next step

Fig. 7-4 Select colorimeter information

#### 2) Set sample batches

Select screen, and select the corresponding communication port, click " To add a batch, right click the batch to rename it. and then click "Choose region" to set the corresponding coordinates and size of the sample batches (when selecting in accordance with pixels area, if there is a red box, it shows that it is out of range).

If one selects a batch and tick "as a reference only, not adjustable, only select one batch", then this batch will be used as a reference target value, which could not be further modified. If you do not tick, such a target value can be modified in the next step.

Click "Next" once setting is completed.

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Multiple batch control	-	_				
Set sample bar	Set sample batches					
Sample batches	-Screen informatio Communication ports:	COM3 -	Select display:	Display1 -		
Sample batches1 Sample batches2 Sample batches3	-Sample regional i X coordinates: Width:		Y coordinates: Meight:	0 Choose region		
Sample batches4	-Colorimeter measu Screen Red	rement value Brightness	Cx	Cy		
	Green Blue					
	🗖 As a referen	nce only, not adjustable	e, only select or	e batch		
Please maintain sample information of the batches: can add or delete export and import. Steps: 1. first select a maintained sample batch; 2. maintain the						

Screen:1 Location:X	X=0, Y=0 Size:32W×16H
🔵 Screen 💿 Pixel	◎ Topology or List Screen
. 12	
Start Columns	
Start Rows of	
Width:	32
Height:	16
	Confirm

Fig. 7-5 Choose region

3) View the effect of initial adjustment; it can automatically switch each color, or be manually



switched; at the same time, the brightness can be set manually.

When there is a colorimeter and the effect of initial adjustment is perfect, there is no need to

make fine adjustment, so one can directly click "satisfactory", and click "Next".

Multiple batch control		
View the effect of	initial adjustment	
View the effect of initial a	idjustment	
Bright	> 30 %	
✓ Automatic switching	Interval 3 📚 Second swit	
	Last step Next st	tep

Fig. 7-6 View the effect of initial adjustment

4) Select the target batch and processing batch; if the step 1) sets a reference model, the target

batch could not be modified here.



Iultiple batch control		×
Select sample batches		
Select the targ	Sample batches1	
Select the proc	Sample batches2	
	$\Theta$	
	Last step Nex	at step

Fig. 7-7 Select the target and pro

5) View the effect of display screen, and make a fine adjustment of monochrome for the processing batch.

Here, click "Re-select Target" to re-select the target batch; click "Switching Batch" to select new batch processing; the previous processing batches will be placed in the processing list for processing at the next time.



Iultiple batch cont	rol	×
Fine adjustmen	t of monochrome (1/3)	
Sample batches		_
Target	Fine adjustment of red Fine adjustment of green Fine adjustment of blue	-
⊕Sample batches1	Red co <	
Processing	Green < 🔰 50	
👭 Sample batches2	Blue c <	
		┥
	Revocation of	
Reselect t Switch bat		
	Next step	2

Fig. 7-8 Fine adjustment of monochrome

Iultiple batch contr	ol	X
Fine adjustment	of monochrome (1/3) Fine adjustment of red Fine adjustment of green Fine adjustment of blue Red co Red co Current target the target batch Current target Sample batches1 Blue	
	Current target Sample batches1	
Reselect t Switch bat	Next step	

Fig. 7-9 Reselect the target batch

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Multiple batch con	ntrol		×
Fine adjustmer	nt of m	onochrome (1/3)	
Sample batches		🖳 Switch processing batch	
Target	Fine ad	Current process Sample batches2 adjustmen	at of blue
Sample batches1	Red c	Select a new batch	> 2047
Processing	Green		> 50
Sample batches2			
	Blue		> 17
			Revocation of
			$\bigcirc$
Reselect t		Confirm	/
Switch bat			
			Next step

Fig. 7-10 Switch processing batch

6) View the effect of display screen; if you are satisfied with the effect of current batch of white, process to the next step; if you are dissatisfied, you should make a fine adjustment of white for the processing batches.



Iultiple batch co	ntrol	X
Fine adjustme	ent of white (2/3)	
-Sample batches-		7
Target	Whether the effect of the current batch of white is satisfactory?	
🚸 Sample batchesi	🔘 Satisfied 💿 Dissatisfied	
Processing		
Sample batches2	Fine adjustment of white	ר
	Red co <	
	Green 😮 🔰 1711	Y
	Blue c <	
	Revocation of	
	Last step Next step	

Fig. 7-11 Fine adjustment of white

7) If the magnitude of adjustment of monochrome and white is too large, it will enter the following interface. Please carefully check the color effect on the screen, and operate according to the software prompts.

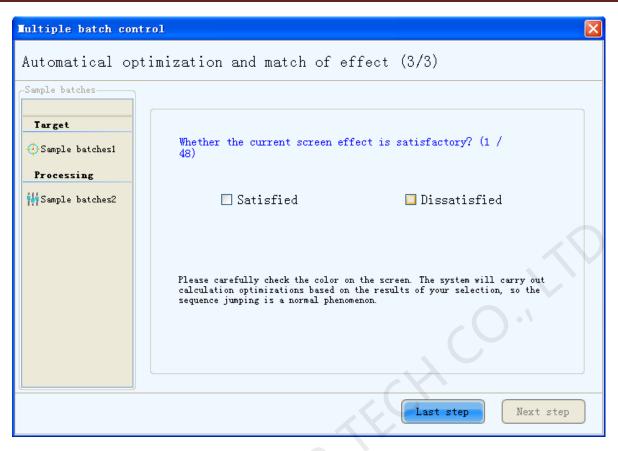


Fig. 7-12 Automatically optimization and match of effect

8) After the completion of adjusting the current batch, view the effect; if you are dissatisfied,

you can back to "Last step"; if you are satisfied, you can continue to the next batch.



<b>T</b> ultiple batch con	ntrol X
	oletion of adjusting the current batch, view the
Sample batches Target ↔ Sample batches1 Have adjusted ✓ Sample batches1 ✓ Sample batches2	Display effect of all batches
Multiple batch control	Complete al Last step Proceed to
	Select the targ Sample batches1
	Last step Next step

Fig. 7-13 View effect of the current batch and select the next processing batch

9) Adjust other batches according to the same steps, and click "Finish all batches" after the



completion.

Multiple batch con	itrol 🗙
After the comp effect.	letion of adjusting the current batch, view the
Sample batches Target Sample batches1 Have adjusted Sample batches1 Sample batches2	Display effect of all batches
	Complete al Last step Proceed to

Fig. 7-14 Complete all batches

10) Select the best solution according to the effect of image.

If the extended operation is ticked, color vividness can be enhanced. The differences between batches may be increased with higher vividness.

If one batch is selected as reference in the step 2), here, the extended effect could not be operated.

ection of best solut	ion
Adjustment has been completed. Ple	ase select better effect according to the image
⊙ Current fine-adjustment effect	Priority effect of white
Extended effect of operation:	Extended operation can enhance color vividness. With an increasing extent, it may increase the differences between batches
Red.	> 0
Green:	> 0
Blue: <	> 0
看色度计调节效果	0 0
right	≥ 30 %
-	erval 3 🛟 Second swit

Fig. 7-15 Selection of best solution

11) Select the batch, and then add one or more unadjusted areas with the same batch on the screen; click on the "screen" to see the effect on the screen, and click "Apply" to apply the adjustment effect to this area.

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Multiple batch control	Same Property in	-		-	-		×
Adjust application of effect							
Sample batches	Adding region			A	oply all	Rev	oke all
	Serial Regional inf	ormation	Screen <sub>.</sub>	Applicati	Revocatio	Deletion	
	1 COM3, Display1	I, X:O, Y:O, W:15	Screen	Apply	Cancel	Delete	
	2 COM3, Display1	l, X:O, Y:O, W:10	Screen	Apply	Cancel	Delete	
	0.1						
Correction sw Chromaticity cc 🔻 📝 Mark all regions of the current batch							
If there is a need to change the color temperature, please open operation of LCT brightness function Save the file Solidify Finish							

Fig. 7-16 Adjust application of effect

#### 12) Save the file

Click **Save the file**, and save the adjustment parameter into .lxy file; next time, directly import the file for adjusting the cabinet of the same batch.

### 8 Receive card relay

For the receiving card supporting the relay module, the parameters of relay can be set here.

The relay can be set as disconnected, closed or automatic; when the relay is set as automatic, the

temperature of closing and the temperature of disconnecting shall be designated.

Timing of receiving card is the accumulated using time of the receiving card; when "Clear

timing", the time will be recorded from 0.



	g of receiving card relay	
Serial	l port COM7 🗸	)
Screen1		
	ter of receiving card relay	
۲	Disconnected	-
0	Connected	
0	Auto	
Tempe	rature under auto mode	
	rature of ted relay C Temperature of disconnected relay C	
	Refresh	
Receive	Card Timing cleared	
	Record Time Unknown	
	Refresh Timing cleared	

After finishing the setting, click "Send" to send the parameters to the receiving card.

Fig. 8-1 Setting of receiving card relay

# 9 Load configuration file

The cabinet configuration files are imported to controller, provided that the controller is

connected to the control computer with the cabinet configuration files being saved in it; if it does

not have it, the screen can be matched on the site, then the configuration files can be saved.

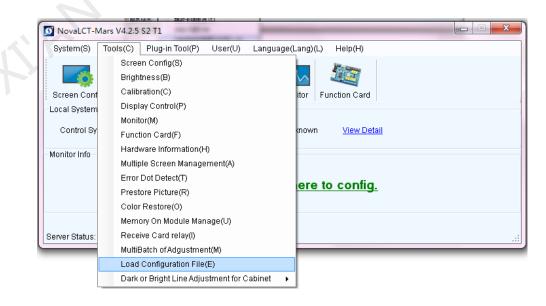
The operations of saving the configuration files is as follows:

Screen Config-C	OM5						
Sending Board Scan	Board Screen Conne	ection					
Module Info Chip: Direction: Cabinet Info		Size: Decode Type:	32W×32H 74HC138 Decod	Scan Type: ling Data Group:	1/16 scan 2	>>	
Regular Pixel Width: Pixel Heioht: Module Casc.	256 <	128 Plea make s 256 the wi and he	dth	idth: ?? Heidt bading error. Please ad	iust perform ma	Please A ake sure e width d height	
Performance Setti	More Setting		Clear Afterglow Accelerate R				
Refresh Rate:	480 -	Hz		4			
Gray Scale:	Normal 4096 🔻		Gray Mode:	Refresh Rate First 👻			
Data Clock:	12.5 -	MHz	Data Duty:	<u>50</u> -	(25~75) %		
Clock Phase: Blanking Time: Line Change T	2 • • 25 • • • • • • • • • • • • • • • •	(=2.00us) (0~19)	Low Gray Co Ghost Contro	- -	(1~24)	$\mathbf{O}$	•
Brightness Effi	68.24%		Min OE:	80 ns			
Smart Setting			Load File	Save File Re	ad From HW Send	To HW	
				Save Config	File Save	Clo	se

Fig. 9-1 Save configuration file

The steps for loading configuration file are shown as below:

1) Click the "Tools (C)"  $\rightarrow$  "Load Configuration File (E)" on the main interface.



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2) The following figures i.e. 9-2 and 9-3 show the common controller and the configuration file

loading interface of Pro. A Rename function has been added for Pro.

Load Configuration File	
Move Up Move Down Advanced	. < 0
Add File Delete File	0.
Rename File Save to HW	

Fig. 9-2 Send Board load Configuration File

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Load Configuration File
Select COM port: USB_PR0:Port_#0007.Hub_#0 v
111 - 副本       Move Up         Move Down       Advanced         Add File       Delete File         Rename File       Save to HW
Set sending card name Enable naming
Name
▶1 asdadaadsadsasfdsf
Rename Save to hardware

Fig. 9-1 NovaPro load Configuration File

#### Name setting of Sending Board:



popped up renaming window. Click "OK" after the name is changed.

Note: The new name is only available after the "Renaming enabling" is ticked off.



Load Configuration File
Select COM port: USB_PR0:Port_#00007.Hub_#0
111 - 副本 Move Up Move Down Advanced
Reame
Name: <u>Asdadadsadsasfdsf</u>
OK Cancel
Se Enable naming
Name ▶1 asdadaadsadsasfdsf
R
Rename Save to hardware

Fig. 9-4 Naming setting of sending board

3) Click Advanced to select a controller for loading configuration files. If no any controller is

selected, the configuration files, by default, will be loaded to all controllers connected to the system.



 Advanced
Sending Board 1
OK Cancel

Fig. 9-2 Selecting a controller for configuration file loading

Save to hardware , all added configuration files will be saved to the selected controller (s). 4) Click • Load Configuration File USB\_PR0:Port\_#0007.Hub\_#0 ~ Select COM port: Move Up Move Down Advanced Add File Delete File Save to HW Rename File Set sending card name ✓ Enable naming Name ▶1 Save to hardwar Rename

Fig. 9-3 Selecting a sending board for configuration file loading

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# **10Configure information management**

Click "Help"→"configure information management" to conduct configuration file management.

Y 10 17 18 18 19	0) () (0) (0) (0) (0)	
		- • •
ıg-in Tool(P) User(U) Lang	guage(Lang)(L) Help(H)	
Calibration Display Control	I Monitor Fu Set init	Documents(D)  ure information management(M) itial position(P) A)
Other Device:	Unknown <u>View Deta</u>	<u> </u>
•	٠	• • •
3.0		
	Calibration Display Contro Other Device:	Calibration Display Control Monitor Fu Calibration Display Control Monitor Fu Other Device: Unknown View Deta Other Device: Onknown View Deta 3.0 Config File Management

Fig. 10-1 Configure information management

Import config: Export all the configuration files in the configuration process, and save in the

computer in .zip format;

Export config: Import previously saved configuration files;

Cancel: Exit the configuration file management.

### 11 Hardware Program updating

Login as an advanced user and type in **admin** on the NovaLCT-Mars main interface to open the page for updating the hardware program. Shown in Fig.11-1, Fig.11-2 is the page for hardware program updating.

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## Note:

1. There isn't any place to view the typing when typing the passcode. Just type in

the passcode directly.

- 2. Just type in the passcode again if the one input before is wrong.
- 3. It not recommended changing the program unless there are problems with the

hardware.

ad Program	
Load Program	
-Select operation commu	nication port
Current operation communication port:	COM5 Device Count: 1
Select Program	Realtek PCIe GBE Family Controller
Program Name:	Tx600 Data Mars V3.6.0.0
Program Version:	3.6.0.0
Program Path:	D:\NovaLCT-Mars\Data\Data_Mars_3.6.0.0\SendCard\Tx600_Data_Mars_3.6.0.0
Select Items To Load	
🔲 Sending Board MCU	Sending Board FPGA Scan Board FPGA Update Reconnect
44	
	ine Record EDOA - Served EDOA
	ling Board FPGA Scan Board FPGA
Communication Info	
Communication Info	rrent control system address:1 port 2 Read FPGA program version of scan board 0 .
Communication Info 2013/12/16 14:59:12Cur	rrent control system address:1 port 2 Read FPGA program version of scan board 0 .
Communication Info 2013/12/16 14:59:12Cur 2013/12/16 14:59:12Cur	rrent control system address:1 port 2 Read FPGA program version of scan board 0 .

Fig. 11-1 The Load Program page



Load Program			×
-Load Program			
-Select operation commu	nication port		
Current operation communication port:	Realtek PCIe GBE Family Controller	<ul> <li>Device Count: 1</li> </ul>	
	COM5		
Select Program	Realtek PCIe GBE Family Controller		
Prooram Name:	Tx600 Data Mars V3.6.0.0		
Program Version:	3.6.0.0		
Program Path:	D:\NovaLCT-Mars\Data\Data_Mars_3.6.0.0\SendCard\T	x600_Data_Mars_3.6.0.0	
Select Items To Load			
	Sca	an Board FPGA	Reconnect
. V3.7.0.6 Total 1, Rema	arks:2013.12.14 for test all 修改热备份 + 改进同步机制	Scan Board: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	nac地址
		C	).,
Scan Board FPGA			
Communication Info			
2013/12/16 14:59:30Rea	ad FPGA program version of scan board 0 .		<b>^</b>
	ad FPGA program version of scan board 0 .		
2013/12/16 14:59:32Rea	ad FPGA program version of scan board 0 .		Clear
Read FPGA program version	of scan board 0 .		

Fig. 11-2 the Load Program page with no Sending Board

#### **Current Operation Communication Port**

Select the serial port or Network port through which the hardware to be updated is connected to

the computer.

## **Program Path**

Select the program to be loaded to the hardware here.

## Sending Board MCU

Select this option if the MCU program of a sending board is to be updated.

## Sending Board FPGA

Select this option if the FPGA program of a sending board is to be updated.



## Scan Board FPGA

Select this option if the FPGA program of a scan board is to be updated.

## Change

Click this button to load the selected program to the selected hardware.

## **Refresh All**

If this option is selected, the version information of all sending boards and scan boards

connected to the current serial port will be refreshed when click the **Refresh** button.

## **Refresh One**

If this option is selected, only the version information of the selected scan board will be refreshed

when click the **Refresh** button.

## Refresh

Click this button to show the current version information of the hardware. This can be used to check whether the hardware program has been updated.

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# 12**Dark or Bright Lines Adjustment for cabinet**

When the user couples with the screen, if it is found that there is a bright dark line after the box

bodies jointed, it can be adjusted by using this function, which will adjust the four sides of the

box body and bright dark degree of four points in order to improve visual abruption caused by

the bright dark lines caused by visual abrupt.

All parameters will be recorded in the dark / bright-line configuration files once the dark or bright

lines are adjusted. The previous dark or bright lines can be reduced by the function of Dark or

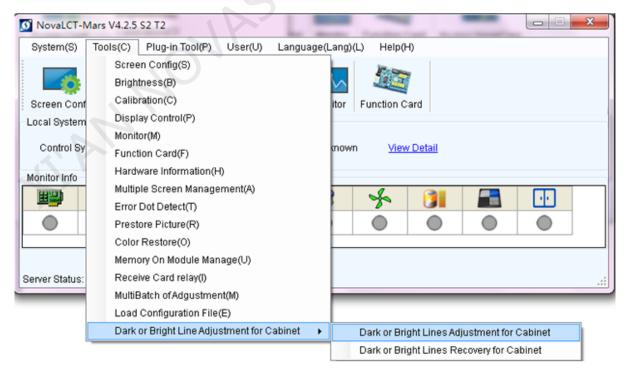
Bright Lines Recovery for Cabinet if necessary.

## 12.1 Dark or Bright Lines Adjustment for Cabinet

The method of operation is as follows:

1) Click on "tools" to "Dark or Bright Line Adjustment for Cabinet"→"Dark or Bright Lines

Adjustment for Cabinet", enter the adjusting page.





🖳 Quckly Adjust Lir	nes						
Choose Display						Operation In	structions and Attentions
Serial Port	СОМЗ	▼ Di	splay Num 1	•	Display Scre	Main Display	•
					,,	(main propriet)	
- Topology Graph -					Region optio 🖪	🛛 Row 🛛 🔽 Colur	nn 🚄 🚓 🕞
Tips: Yellow m	eans select all leds,w	nile green means se	elect some leds.		Nogion option.		
1	2	3					
		_					
Adjust Lines					📄 Display Number	Lock Selection	Hide Topology
Method:	RGB Prior		White Prior				
Color:	Red	Oreen	<ul> <li>Blue</li> </ul>	White			
	097	Green	O Dide				
Adjust:				••••	1.000	Save To Flash	Save To File
		<u>1.00</u>	<u>00</u>				

Fig. 12-1 Quickly adjust bright dark line interface

- 2) Select the screen that will be adjusted currently, and select the location that will play the screen, which setting must be set the same as the computer display.
- After select screen, it will display splicing topology corresponding immediately; the user can quickly see the specific location that bright dark line shines upon the topological graph on the screen. And then select to adjust.

It will introduce the method that select and cancel the edge or vertex as follows:

a) Using the mouse to directly click the four edges or vertices of the box body selected,
 click firstly to select, click secondly to cancel.



🖳 Quckly Adjust Lir	nes						
a Quanty Majare an						Operation Ir	structions and Attentions
Choose Display Serial Port	СОМЗ	Dia	splay Num 1		Dianlau Gara		
SellarFolt	COM3	▼ Dis		•	Display Scre	Main Display	•
Topology Graph					Region optio 🤋	Row 🔽 Colur	on 📕 🔿 💽
1 Ips: Yellow m	eens select all leds,v	vhile green means se	lect some leas.		itegenepie		
					🗖 Display Number	Lock Selection	Hide Topology
Adjust Lines	DCD Drier		White Prior				
Method:	RGB Prior		_				
Color:	Red	Oreen	🖱 Blue	White			
Adjust:		<u>1.00</u>	0		1.000	Save To Flash	Save To File

Fig. 12-2 Click on the edge or vertex of the box body selected



 $\blacksquare$  : Click to cancel all the part selected.



: Enlarged topological graph.

I Reduce the topology map.

Display number: If checked, the number is displayed on the screen that is convenient for the

user to find the bright dark lines.

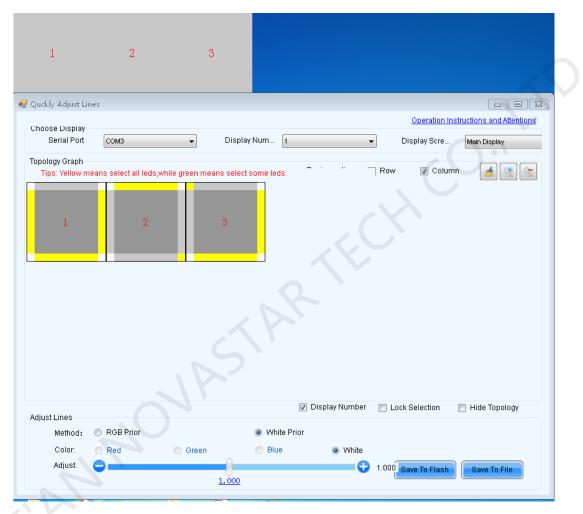


Fig. 12-3 Number On Display

Lock selection: if selected bright dark side, check it that will be locked to avoid accidentally

cancel or multiple select.

Hide topological: check it to hide the topological graph.

a) It can also select multiple edges or multiple vertices by using the mouse. If the user also

checks "row direction" and "column" direction, select the vertices and the edges in the



two directions of row and column in the box selection, after it is completed, and then

click somewhere selected will cancel the selection.

b) Double click edges that can select part of the points on the edge.

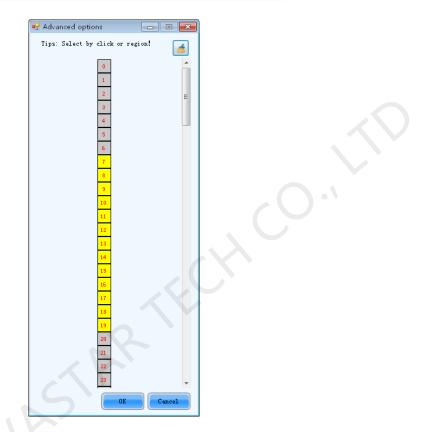


Fig. 12-4 Select part of the points on the edge

- 4) Select the part that will be adjusted, began to adjust bright and dark degree, drag link adjustment by using the mouse. There are two types of adjustment, one is priority mode for red, green and blue that can respectively adjust bright and dark of red, green and blue; the other is a priority mode for white, adjust red, green and blue synchronously.
- 5) Adjust to the best effect, click on Save To Flash , save the adjusting effect currently to the hardware, click on Save To Flash that will save the adjusting data to a file, a display screen is saved as a file, which also can upload the file after uploaded to correction database.

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## 12.2 Dark or Bright Lines Recovery for Cabinet

All parameters will be recorded in the dark / bright-line configuration files once the dark or bright lines are adjusted. The method for recovering dark or bright lines is to load the ark / bright-line configuration file to recover the display to the last dark or bright lines. If this file is used for several times, adjusted parameters of those previous recovering dark or bright lines will be recovered accordingly.

## Method for recovering dark or bright lines

Click "Tools"  $\rightarrow$  "Dark or Bright Lines Adjustment for Cabinet"  $\rightarrow$  "Dark or Bright lines Recover for Cabinet" on the LCT main interface.

Select the display for dark / bright line reducing, click "Browse" to load the dark / bright line file in relation to the display and then click "Reduce" to reduce them to the last ones.

	Dark or Bright Lines Recovery for Cabinet – 🗆 🗙
Choose Display Serial Port	COM6 V Display Number 1 V
-Reduce Dark or Br Dark or Bright Lines	C:\Users\lijin\Desktop\COM3-1.qal Browse Reduce Withdraw

Fig. 12-1 Dark or bright lines recovery for cabinet

# 13Problem and Solution

13.1 NovaLCT-Mars shows "No Hardware" on corresponding pages.

Check whether the hardware system is powered on.

Check whether the serial port cable connection is good.

# 13.2NovaLCT-Mars shows "No Screen" on corresponding pages.

If the LED display has been configured already, then try reading the configurations from the display by click the Read from HW button on the Screen Configuration page, as shown in Fig.13-1. If the display has not been configured yet, configure it.

Screen Config-CO <b>I</b> 19	
ding Board Scan Board Screen Connection	
creen1	Screen N 1 Config
Screen Type: 🔘 Simple Screen	Standard Screen     O Complex Screen
Basic Information           Location:         X:         500         Y:         0	Virtual Mo 🗆 Enable
	an Board I Scan Board I Reset All Hide Line
1	1 Sending#:1
	Port1 1 Scan Bo::1
Port Index	Widh:128 Height128
1 2 3 4	Helgin, 120
Back Clear Port	
Scan Board Size Width: 128	
Heiaht 128	
Apply to port	
Set Blank	
Note:Click or drag left	mouse button to config screen, right mouse button to ca
Detect Status	Read File Save File Read from HW Send To HW
actory Restore	Save Config File Save Close



# 13.3 The LED display does not show the image correctly during the Smart Setting procedure.

Check whether the sending board resolution and the graphic card output video resolution on the

Sending Board page are the same. Set them to be the same if they are not. Shown in Fig.13-2 is

the Sending Board page.



Sending Board Scan Board Screen	Connection	
Current Display Mode Sending Board Resolution: 1440 x 900	Graphics output resolution: 1440 x 900	Refresh
Set the sending board display r Resolution: 1440 x 900	1440	
Refresh Rate: 60	Hz	Set

Fig. 13-2 The Sending Board page

Check whether the settings in the Smart Setting procedure are correct.

# 13.4Only a part of the modules of each cabinet work normally in Smart Setting.

Check whether the size of the module array is correctly set in the page of Smart Setting Step 1.

Shown in Fig.13-3 is the Smart Setting Step 1 page.

Smart Setting Step 1		
Chip Type:		
Data Type:	Concurrent	~
Chip Type:	Common Chip	~
OE Polarity:	Unknown	~
Module Info		
	Regular Module     O Irregular Module	
Module Type: Chip Count of each co		
Chip Count of each co	1	
Actual Pixel:	x: 32 🗘 y: 32 🗘	
Data Group:	Unknown 🗸	
Decoding Type:	74HC138 Decoding	~
Scan Type:	Over 16 Scans 1/16 scan	
Module in one scan		~
	Cols: (2 🗘 Rows: (2	(ک
Module Cascade Type(	rom The Front)	
Left To	Right To Down	
Right	Eeft Down To Up	
Scan Board Work Mode		
Hub Mode: 📀	Normal 🛛 🔿 20 Groups 🔿 24 Groups 🔿 28 Gro	oups
Ghost Control Signa	al Polarity: 💿 High 🔿 Low	
ccer oonaror orgin	Contraction Contraction Contraction	
	Next Cancel	1
	Cancel	J

Fig. 13-3 The page of Smart Setting Step 1

## 13.5 Permission error

If the operating system is Win8 or above, the user is suggested to install NovaLCT-Mars in other drives than the system disk; if user insists on installing the software in the system disk, Permissions shall be given manually to the software, otherwise part of the function of the software requiring Permission will not work normally.

Operating procedures to give Permissions to the software are as follows:

1) After installing LCT, find



on the desktop, right click attribute to find the path of the document.

2) Return to the previous level from the opened file directory, i.e. the root directory of \Nova

Star-Mars\.

am F	iles∖Nova Star∖NovaLCT-Mars	
툴(V)	工具(T) 帮助(H)	
-	共享 🔻 新建文件夹	
	各称 Bin Data Help Source unins000.dat 纾 unins000.exe	

Fig. 13-4 Enter into the root .. \Nova Star-Mars\

3) Select Bin document, right click attribute->security.



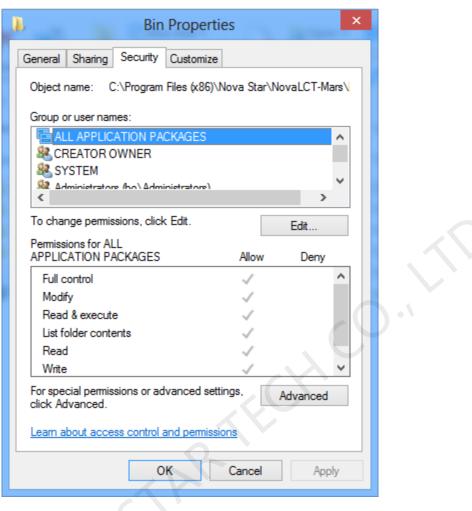


Fig. 13-5 Bin properties

- 4) In the group or username, check whether there is current user or Everyone; if not, skip to step 5.If there is, click to check whether the "allow" corresponding Permissions below has been checked; if not, check it, and then click "OK" to finish Permissions setting.
- 5) Add Everyone user for the directory.

Click Edit... to enter the following interface:



	Permissions for Bin	×	
	Security		
	Object name: C:\Program Files (x86)\Nova Star\NovaLC	T-Mars∖	
	Group or user names: ALL APPLICATION PACKAGES CREATOR OWNER		
	<ul> <li>SYSTEM</li> <li>Administrators (bo\Administrators)</li> <li>Users (bo\Users)</li> <li>TrustedInstaller</li> </ul>		
	Permissions for ALL	nove	
	Full control     Image: Control       Modify     Image: Control       Read & execute     Image: Control		
	List folder contents Read		
	Learn about access control and permissions		
	OK Cancel	Apply	
6) Click Add	Fig. 13-6 Permissions for Bin		
	Select Users or Groups	? ×	
	this object type: Groups, or Built-in security principals	Object Types	
From th	is location:	Object Types	
BO		Locations	
	ne object names to select ( <u>examples</u> ):	Check Names	
Adv	anced OK	Cancel	
	Fig. 13-7 Add User		
7) Click Advance	, find Everyone in the search result; sele	ect it and click OK.	



	Select Users or Group	os ? ×
Select this object type:		
Users, Groups, or Built-in sec	urity principals	Object Types
From this location:		
BO		Locations
Common Queries		
Name: Starts with	Y	Columns
Description: Starts with	Y	Find Now
Disabled accounts		Stop
Non expiring password		
Days since last logon:	$\sim$	<i>7</i>
Search results:		OK Cancel
Name In Folder		^
Access Contr BO		
Administrator BO		
Administrators BO		$\mathbf{v}$
ALL APPLICA ANONYMOU		
Anthenticated		
Backup Oper BO		
BATCH		

Fig. 13-8 Select User

8) Click OK again.

Select this object typ	be:	
Users, Groups, or B	uilt-in security principals	Object Types
From this location:		
BO		Landbara
BU		Locations
	nes to select ( <u>examples</u> ):	Locations
	nes to select ( <u>examples</u> ):	Check Names
Enter the object nam	nes to select ( <u>examples</u> ):	
Enter the object nam	nes to select ( <u>examples</u> ):	

#### Fig. 13-9 Add "Everyone"



9) Enter into the following interface; select all of the "allows" and click OK.

Permission	s for Bin	_	×
Security			
Object name: C:\Program Files (x	86)\Nova Star\I	NovaLCT-Mars\	
Group or user names:			
E ALL APPLICATION PACKAGE	S	^	
& CREATOR OWNER			
SYSTEM			
Administrators (bo\Administrato	rs)		
Severyone		~	
<		>	
	Add	Remove	
Permissions for Everyone	Allow	Deny	•
Full control	•		
Modify	•		
Read & execute	✓		
List folder contents	<b>&gt; &gt; &gt;</b>		
Read			
Learn about access control and per	missions		
ок	Cancel	Apply	

Fig. 13-10 Finish Permissions setting for Bin

10) Finish Permissions setting and begin to enjoy the convenience brought by LCT.

# 14**Appendix**

## 14.1 Update Info

Version	Date	Description	Remark
V1.0	2011-6-3	Initial version	
V1.1	2011-8-22	Modified according to feedbacks	
V1.2	2011-9-21	Add the part for multifunction card.	
V1.3	2011-11-7	Modified according to application modification.	
V1.4	2011-12-14	For NovaLCT-Mars Ver.1.4. Add the sending board configuration.	.\
V2.2.1	2012-3-8	For NovaLCT-Mars Ver.2.2.1.	
V2.4.0	2012-4-16	For NovaLCT-Mars Ver.2.4.0.	
V3.0.0	2013-2-25	For NovaLCT-Mars Ver3.0.0	
V4.0.0	2013-12-12	For NovaLCT-Mars Ver4.0.0	
V4.1.0	2014-03-18	For NovaLCT-Mars Ver4.1.0	
V4.2.0	2014-06-18	For NovaLCT-Mars Ver4.2.0	
V4.2.5	2015-04-24	For NovaLCT-Mars Ver4.2.5	
-Fi	ANN		