

## 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, Micro block  $\geq$ and other series of products, and supportTLC59282, TLC5929, TLC5944, DM13A, DM13H, P2510, SUM2016, SUM2017, MBI5020/5024/5034/5035/5042/5050/5152, SUM2032, MY9221/9262,

RT5924and other IC.

No sending board mode supported, being fit for small screen control.  $\geq$ 



# 1.1 Configuration list

Product name	Type/Version No.	Functions	Remarks
NovaLCT-Mars	V3.2.0	Operating platform	Standard configuration
	MSD300		Selectable
	/ MSD600		
Sending board	/MCTRL300	Transmitting data	
Sending board	/MCTRL500	Transmitting data	
	/MCTRL600		
	MCTRL610	(	O.
	MRV200/MRV210	Daine connected with the	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	VA	the hardware	
	MFN300	Monitoring temperature,	Selectable
Multifunctional		humidity and the optical	
card		numerty and the optical	
J.		probe	
	Photoelectric		Selectable
	converter	Remote transmission	
Accessories			
	Optical probe	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.

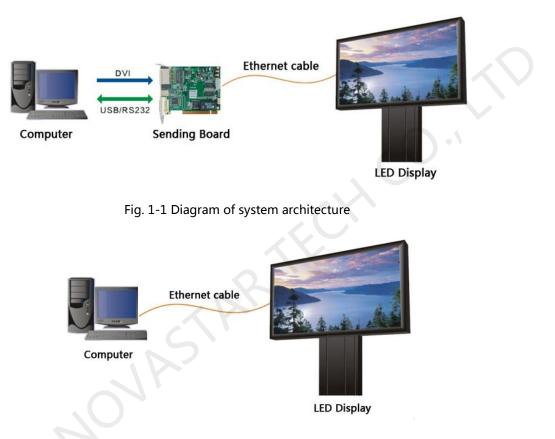


Fig.1-2 Diagram of system architecture with no Sending Board

# 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 storageof 256Mor

above.



#### 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.

Passw	
Login	

Fig. 4-1 Advanced Login

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

users. Shown in Fig.4-2.

MovaLCT-Mars V4.2.0	Sec. 2	0						
System(S) Tools(C) Plug-in To	ool(P) User(U) Lan	guage(Lang)(L) Help(	H)					
Screen Config	bration Display Control	Monitor Function C	Card					
-Local System Info								
Control Svstem: 1	Control Svstem: 1 Other Device: Unknown View Detail							
Monitor Info								
		8 %	3	· · ·				
1								
Server Status: Server Version:3.0								

Fig. 4-2 the main interface for advanced users

## 4.1 Main Menu

> System

#### Reconnect

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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**

- **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.

#### 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.

#### **Point Detect**

This is used to open the page for point 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.

#### **Configuration of MCTRL660**

Add/Delete configuration files;

Modify file name ;

Save the configuration file in MCTRL660.

- 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

This is for user login. The password for advanced users is **admin**.

#### Language

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This is used to switch the language of the NovaLCT-Mars application. Languages available now are simplified Chinese and English.

> Help

Select **Help**->**About** to check the version information about the NovaLCT-Mars application.

4.2 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.

## 4.3 Monitor Info Panel

Shown in the Monitor Info panel is the current monitored result of the system. Red dots indicate

there are errors detected while green dots mean no error. Click a red dot to access the alarm

window containing the corresponding error info. An alarm window is as shown in Fig.4-2.Click



the blue hyperlink in an alarm window to open the monitor page of the corresponding LED display.

Alara				
Display Name	Count			
COM3-Screen1	10			

Fig. 4-3 Alarm window containing error info

# 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	N 0 1-	×
- Select communication	port	
Current operation	СОМ5	<b>_</b>
	COM5 Realtek PCIe GBE Family Controller	
Confia Screen	Realition Fold ODE Failing Controller	
Load Config File		Browse
Load Coning File		BIOWSE
	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-CO <b>I</b> 19					
Sending Board Scan Board Scree	n Connection				
Cisplay Mode Current Display Mode Sending Board Resolution: 1440 x 900	Graphics outpu resolution:	t 1440 x 900	Refresh		
Set the sending board display	mode				
Resolution: 1440 x 900	px 🔽 🗌 Cust	om: 1440	x 900		
Refresh Rate: 60	Mz Hz		Set		
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	1	1	4		
Refresh Send		Add	Edit Delete		
HDMI Settings					
Auto Select				$\bigcirc$	
Audio Input S External	*				
Video Input S DVI	~				
Bit Of Input S 8 Bit	~	Send	Resresh		
Factory Restore		0	Save Config File	Save Close	

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 l	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.

Tote: (1).Pption 1, cli	ck 'Next' to begin	n smart setting	ł	
(2).Option 2 or 3	, load module info	ormation to sof	tware.	
) Option 1:Smart se	tting			
) Option 2: Load mo	dule from file			
File Path:			Browse	
🔵 Option 3: Load mo	dule from database	n.		
Cabinet Database Path:			Browse	
Selected Module:			Select Modul	• • •
			34	

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.

```
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```



art Setting Step 1			×	
Chip Type:				
Data Type:	Concur	rent	~	
Chip Type:	Commo	n Chip	*	
OE Polarity:	Unknov	vn	*	
Module Info				
Module Type:		Regular Module		
Chip Count of each (	CO	1		
Actual Pixel:		х: 32 🗘 у: 32 🗘		
Data Group:		Unknown 🗸		
Decoding Type:		74HC138 Decoding	*	
Scan Type:		Over 16 Scans 1/16 scan	*	
Module in one scan		Cols: 2 Cols: 2	•	
Module Cascade Type	(From T	he Front)	A	
Left To Right		ht To Up To Down To Up		
Scan Board Work Mod	e			
Hub Mode: 🧕 🧕	) Norma	al 🔿 20 Groups 🔿 24 Groups 🔿 28 G	roups	
Ghost Control Sig	nal Pola	rity: 💿 High 🔿 Low		
		Next Cancel		

Fig. 5-4 Smart Setting Step 1

#### 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 3	2		6	
Current Module is:				
💿 Black	O Showing			
	(	Next	Cancel	
	Fig. 5-5 Smart Setting Step	o 2		$\overline{\langle V \rangle}$
lote :				
his step will be skipped	l if module polarity is kno	own and s	et 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.



💿 Aut	to switch status 🛛 🔘 Manual switch st	atus
lease	choose the module color in each status:	
01	Red A	*
0 2	Green	*
<u></u> ЭЗ	Blue	*
	Red B Or Black	*

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.

the modu	les:	
8	\$	Row

Fig. 5-7 Smart Setting Step 4

#### 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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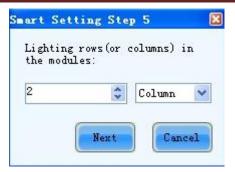


Fig. 5-8 Smart Setting Step 5

#### > 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.

<ul> <li>Auto Switch Status</li> </ul>	🔘 Manual Switch Stat
Please look at the modules	
1 2	
Thich state can fully light the current	
module(If both, just choose one):	1

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.

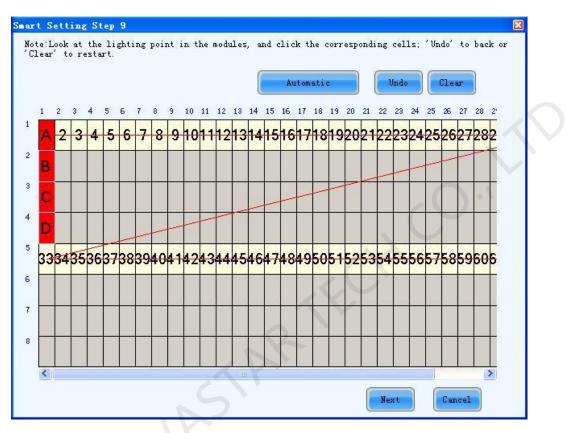


Fig. 5-10 Smart Setting Step 9

# Note : Image: White 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

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.

ote: You can save module to	file or cabinet	database for late	r using.	
Module Name:				
⊙ Option 1: Save module 4	o file			
File Path:				Browse
🔿 Option 2: Save module 4	o database			
Cabinet Database Path:			Change Database	View

Fig. 5-11 the Save Module dialog

	Note :
and a	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.

💀 Screen Config-COMI	F. C.				
Sending Board Scan Board	Screen Connection				
Screeni			Screen N	Config	Read from
	No Scree	en, please	click 'Confi	8'1	
Petect Status	(	5	Bead File	Save File	Send To HY
Factory Restore			Save Config File	Save	Close

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**

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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-COII9
Sending Board Screen Connection
Screen N 1 Config
Screen1
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
Scan Bo. Rows: 8 Scan Bo. Heig 128 Pixel
Sendina#: 1
Connecting Mode
Port 1 Lo 64 ♀ (16≤x≤64, and must be integer multiples of the columns of scan boards!)
Advance
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

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:

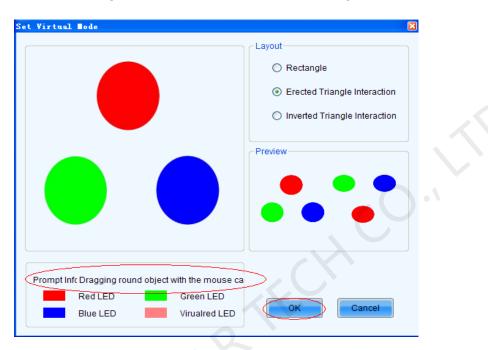
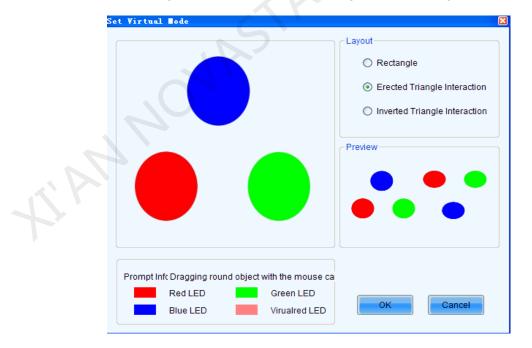
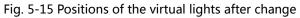


Fig. 5-14 Positions of the virtual lights before change





#### Scan Board Columns/Rows

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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 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.

#### **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.



Screen Type: © Simple Screen	Stand	dard Screen	Complex S	creen		
Location: X: 0 Y: 0 Operate Port Sending Board Index	V Scan Boa Columns:		Scan Board	4 Rese	tAll 🔲 Hide Line	
1 2 3 4 5		1	2	3	4	
6 7 8 9 1		Sending#:1 Port:1	Sending#:1 Port:1	Sending#:1 Port:1	Sending#:1 Port:1	
Port Index	1	Scan Better Width:128	Con Do::3 Width:128	Width:128	Width:128	
1 2 3 4		Height: 28 Sendine#:1	Height:128 Sending#:1	Height:128 Sending#:1	Height:128 Sending#:1	
	2	Port:1 Scan Bo::5	Port:1	Port:1	Port:1	
	2	Width:128 Height:128	Width:128 Height:128	Width:128 Height:128	Width:128 Height:128	
		Sending#:1	Sending#:1	Sending#:1	Sending#:1	
Connect	3	Port:2 Scan Bc.:4	Port:2 Con Do::0	Port:2 Coan Do.:2	Port:2 Can E <mark>S</mark> .1	
Back Clear Port		Width:128 Height: 28	Width:128 Height:128	Width:128 Height:128	Width:128 Height:128	
Scan Board Size		Sending#:1 Port:2	Sending#:1 Port:2	Sending#:1 Port:2	Sending#:1 Port:2	0.1
Width: 128	▶ 4	Scan Bo::5 Width:128	Ocan Bolic     Width:128	Cean Do.:7 Width:128	Ccan ED8 Width:128	
Heiaht 128		Height:128	Height:128	Height:128	Height 128	
Apply to port						
Set Blank						
Set Blank						

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.

#### 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:



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	Screen Config-		]
	Screen1	Screen N 1 -	
	Screen Type: O Simple Screen Basic Information Location: X: 0 Y: 0	Standard Screen     Complex Screen      Virtual Mo Enable	
	Operate Port Sending Board Index 1 2 3 4 5 6 7 8 9 1 Port Index 1 2 3 4 Config 2 Internet access number of deconcentrator © None One Two	Scan Board A Scan Board Rows: 4 ResetAil Hide Line 1 2 3 4 Sending# Sending# Port: Sending Board Index Sending Board Index 1 2 3 4 5 6 7 8 9 1 Sending card internet access: Sending card internet access: Sending card internet access: Mathematical Sending# Port: Sending card internet access: Sending card internet access model: Sending card internet card card internet access model: Sending card internet card card	
	Back Clear Port Scan Board Size Width: 128 -	Ok     Cancel       Ok     Cancel       Read File     Save File       Read from HW     Send To HW	
ŀ	Factory Restore	Save Config File Save Close	

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.

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).

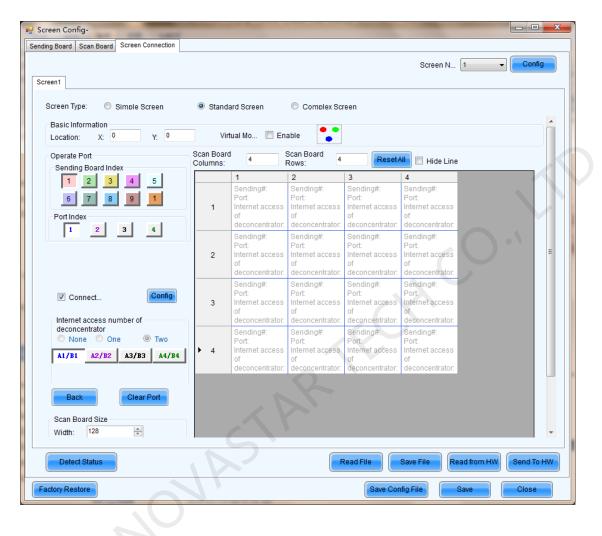
Example 1: Port 1 and Port 2 of sending board 1 are set as" two"; then internet access model of

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.





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Screen Type: © Simple Screen Basic Information Location: X: 0 Y: 0		ard Screen tual Mo 🔲 En	Complex Scr	reen			<b>^</b>
Operate Port Sending Board Index	Scan Board Columns:		Scan Board Rows:	Reset	💵 🔲 Hide Line		
1 2 3 4 5 6 7 8 9 1 Port Index	1	1 Sending#: Port: Internet access of deconcentrator:	2 Sending#: Port: Internet access of deconcentrator:	3 Sending#: Port: Internet access of deconcentrator:	4 Sending#: Port: Internet access of deconcentrator:		
1 2 3 4	2	Sending#: Port Internet access of deconcentrator:	Sending#: Port: Internet access of	Sending#: Port Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:		Ш
Connect Config	3	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:		
deconcentrator None One Two A1/B1 A2/B2 A3/B3 A4/B4	▶ 4	Sending#: Port: Internet access of deconcentrator:	of	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	O·	
Back Clear Port Scan Board Size Width: 128							

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".



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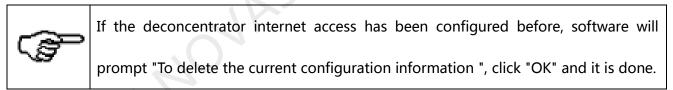
ding Board Scan Board Screen Connection					Screen N	1  Config
Screen Type: O Simple Screen	Standa		Complex Scr	een		^
Operate Port Sending Board Index	Virte Scan Board Columns:		able • Scan Board Rows: 4	Reset	All 🔲 Hide Line	
1 2 3 4 5 6 7 8 9 1 Port Index	1	1 Sending#: Port: Internet access of deconcentrator:	2 Sending#: Port: Internet access of deconcentrator:	3 Sending#: Port: Internet access of deconcentrator:	4 Sending#: Port: Internet access of deconcentrator:	
1 2 3 4	2	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	H
Connect	3	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	
deconcentrator None  One Two A1 A2 A3 A4 A5 A6 A7 A8	• 4	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	
Back Clear Port Scan Board Size Width: 128				EC.		
Detect Status				Read File	Save File Re	ad from HW Send To HW



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Screen1						1 - Config
Screen Type: O Simple Screen	Standa	ard Screen	Complex Scr	een		<b>^</b>
Location: X: 0 Y: 0	Vir	tual Mo 🔲 En	iable			
Operate Port Sending Board Index	Scan Board Columns:		Scan Board Rows: 4	Reset	All 📃 Hide Line	
		1	2	3	4	
6 7 8 9 1 Port Index	1	Sending#: Port: Internet access of deconcentrator:	of	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	
1 2 3 4	2	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	ш
Connect Config	3	Sending#: Port: Internet access of deconcentrator:	of	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	
deconcentrator None One Two	▶ 4	Sending#: Port: Internet access of deconcentrator:	of	Sending#: Port: Internet access of deconcentrator:	Sending#: Port: Internet access of deconcentrator:	
Back Clear Port Scan Board Size Width: 128				EC.		

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

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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

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

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	Screen Connection					
					Screen N 1	✓ Config
n1						
		-		_		
	Simple Screen	O Standare	d Screen (	Complex Scree	en	
can Board Setting-						
Sending#	Port 1	Scan Bo.	Start X 500	Start Y 0	Width 128	Height 128
1	1	2	628	0	120	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
						.0.1
Virtual M   Ena  Detect Status	able		Read	Ada 1 File Save	1 Edit	Delete Clear

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.

## Delete

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

#### Clear

To delete all receiver cards from the list.

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# 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 Configending Board Scan	g-COII9 Board Screen Con	nection					
Module Info							
· · · · · · · · · · · · · · · · · · ·		Size:	32W×32H	Scan Type:	1/16 scan	>>	
Direction:	Horizontal	Decode Type:	74HC138 Decoding	Data Group:	2		
Cabinet Info							
🔊 Regular			O Irregular		_		
Pixel Width:		make	ase Nidth:	?? Height: Lerror, Please adius	??	Please	
Pixel Height:		=256 the w	/idth		t	he width and height 🗸	
Module Casc	Right to Left				w Cabinet		
Performance Settir	ng						
Group Swap	More Setting						
Refresh Rate:	240 🗸	Hz	Accelerate R 4		2		
Gray Scale:	Normal 16384	•	Gray Mode: Gray	/ First 🗸	4		
Data Clock:	12.5	MHz	Data Duty: 50		(25~75) %		
/			Low Gray Co 1		(20 10) //		
Clock Phase:			0	\$			
Blanking Time:	25	(=2.00us)	Ghost Contro 20	*	(1~24)		
Line Change T	3	(0~19)					
		_					
Brightness Effi	52.31%		Min OE: 24 n	8			
		C					
			/				
Smart Setting			Load File	Save File Read	From HW	d To HW	
				Save Config Fi	le Save	Clo	

Fig. 5-21 the Scan Board page

#### **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.

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Regular				
Pixel Width:	90	*	<+96	>
Pixel Height:	32	*	<=256	>
Module Casc	Right to L	eft		*

Fig. 5-22 the Regular Cabinet Info panel

#### 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.

	No	ote
	1.	If the module cascade direction is from left to right or from right to left, then
mb		as mentioned above, the Maximum Width depends on the parameters such
aus		as refresh rate, gray scale levels and shift clock frequency, and the Maximum
		Height depends on the module design.
	2.	If the module cascade direction is from top to bottom or from bottom to top,

then, factors affect the Maximum Width and Height are just switched. The Maximum Height depends on the parameters such as refresh rate, gray scale levels and shift clock frequency, and the Maximum Width depends on the module design.

# 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.

orformance Cottin	-				
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	Read From HW Send To HW
		ia E 22 Tha	Dorformanc	e Setting par	

**Clear Afterglow:** Some of chips are supporting the functions of eliminating afterglow, and the software defaults to be ticked.



nding Board Scan E	Board Screen Conner	ction					
Module Info						_	
		ze:	32W×32H	Scan Type:	1/16 scan		>
Direction:	Horizontal D	ecode Type:	74HC138 Decodin	g Data Group:	2		
Cabinet Info							
Regular			💿 Irregi	ular			
Pixel Width:	128 🚔 <=1	20	lease 🔺 Widt	th: ?? Heiaht:	??	Please	
Pixel Height:	256 🚔 <=2		width	dina error. Please adiu	st perform	make sure the width	
Module Casc	Disht to 1 of	and	height _ C	onstruct	ew Cabinet	and the field	
modulo odoo	Right to Left	▼		Vite	ew Cabinet	and height 💂	
Performance Settin		•			ew Cabinet	and neight	
Performance Settin					ew Cabinet		
	ig	•			ew Cabinet		
Performance Settin	ig		Clear Afterglow	4	ew Cabinet		
Performance Settin Group Swap	More Setting		Clear Afterglow Accelerate R			and neight	
Performance Settin Group Swap Refresh Rate:	Ig More Setting 480 • Normal 4096 •	Hz	Clear Afterglow Accelerate R	4		and neight 🔻	
Performance Settin Group Swap Refresh Rate: Gray Scale: Data Clock:	99 480 • Normal 4096 • 12.5 •		Clear Afterglow Accelerate R Gray Mode: Data Duty:	4	(25~75) %	and neight 🔻	
Performance Settin Group Swap Refresh Rate: Gray Scale: Data Clock: Clock Phase:	19 More Setting 480 Normal 4096 12.5 2	Hz MHz	Clear Afterglow Accelerate R Gray Mode: Data Duty: Low Gray Co	4   Refresh Rate First  0  A			
Performance Settin Group Swap Refresh Rate: Gray Scale: Data Clock:	99 480 • Normal 4096 • 12.5 •	Hz	Clear Afterglow Accelerate R Gray Mode: Data Duty: Low Gray Co	4			
Performance Settin Group Swap Refresh Rate: Gray Scale: Data Clock: Clock Phase:	19 More Setting 480 Normal 4096 12.5 2	Hz MHz	Clear Afterglow Accelerate R Gray Mode: Data Duty: Low Gray Co	4   Refresh Rate First  0  A	(25~75)%		
Performance Settin Group Swap Refresh Rate: Gray Scale: Data Clock: Clock Phase: Blanking Time:	19 More Setting 480 ▼ Normal 4096 ▼ 12.5 ▼ 2 ▼ 25 ★	Hz Hz (=2.00us)	Clear Afterglow Accelerate R Gray Mode: Data Duty: Low Gray Co Ghost Contro	4   Refresh Rate First  0  A	(25~75)%		

Data group exchange: adjust the order of the data groups;

# More settings:

s	ymmetrical/Data Group Extension 🛛 🔀
N	Output Mode Symmetrical Output Four Doors Output Data Group Extension Twenty Data Grou Twenty Four Data Twenty Four Data Twenty Eight Dat
	D signal is taken as the second way clock to
	Ghost Control Signal
<u> </u>	Signal Switch: 💿 Open 🛛 Close
	Signal Polarity: 💿 High 🛛 Low
	C Hub Mode
	Normal O 20 Gourps
	O 24 Groups O 28 Groups
	Graphics Output
	Scan Direction     Reverse Sca
	OK Cancel

Fig. 5-25 More settings

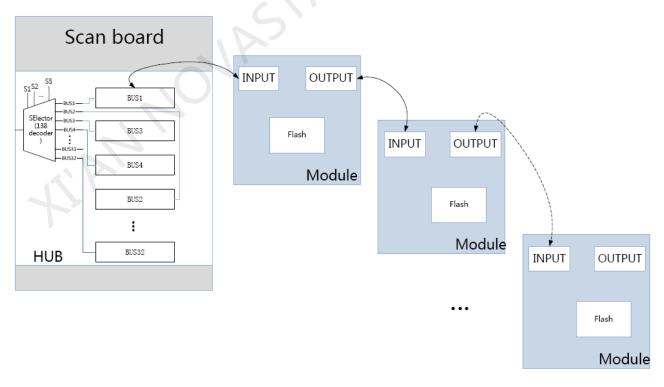


#### > Output Mode

## • 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.

- 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.5-26 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. 5-26 physical connection schematic diagram of Flash

As shown in Fig. 5-27, 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 the size set currently.

Flash Cols:	4 Fla	ash Rows: 4				Back	ResetAll
BUS		1	2	3	4	-	
1 2 3 5 6 7	4 8 1	BUS:1 Number:3 Width:52 Height:16	BUS:1 Number:2 Width:32 Height:16	BUS:1 Number:1 Width:32 Height:16	BUS:1 Number:0 Width:32 Height:16		
9 10 11 13 14 15	12 16 2	BUS:2 Number:0 Width:52	BUS:2 Number:1 Width:32	BUS:2 Number:2 Width:32	BUS:2 Number:3 Width:52		
17         18         19           21         22         23	20	Height:16 BUS:3 Number:3 Width: 82	Height:16 BUS:3 Number:2 Width:32	Height:16 BUS:3 Number:1 Width:32	Height:16 BUS:3 Number:0 Width 32		
25 26 27 29 30 31	28	BUS:3 Number:4	BUS:3 Number:5	BUS:3 Number:6	BUS:3 Number:7		
Flash Control Size		Width:32 Height:16	Width:32 Height:16	Width:32 Height:16	Width:52 Height:16		
Width: 32 Height: 16 Apply to							
Start X: 96 Start Y: 48							

Fig. 5-27 MOM Physical Setting

#### > Data Group Extension

• Twenty data group mode

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.

	able Adjustment of I	g Data Line Monitoring Data Line	٥	3
		Transfer Data Line Signa	al	
► D	ata Line 1	Red	~	
D	ata Line2	Green	*	
D	ata Line 3	Blue	*	
D	ata Line 4	Vitual Red	*	
				0.1
	0	K Cancel		

Fig. 5-28 Monitoring Card Data line Adjustment

> Additional Function : eliminate the afterglow of the insolated points, and shut down the

indicators of the receiving card.

	Additional Function		×
	Isolated Point Afterglow Indicator Light of Rec	Clear	
'AD'	ОК	Cancel	
$\mathcal{S}$	Fig. 5-29 Additio	nal 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.

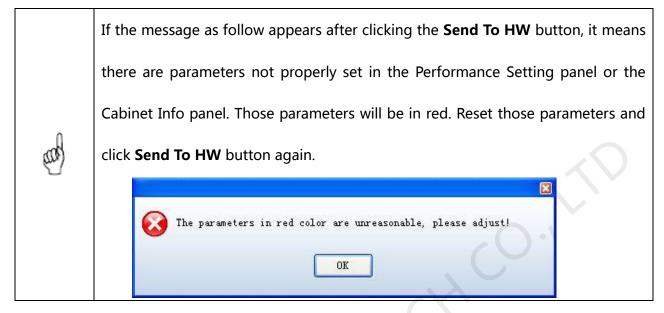
#### The steps of performance parameters adjustment are as follow.

#### > 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.5-30 will appear after clicking

#### the Send To HW button.

😸 Send Parameters to Scan Board	
<ul> <li>All Scan Boards</li></ul>	Send

Fig. 5-30 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.

#### 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.5-31 and Fig.5-32.

*	By Address Send By ' Sending#	Port	Scan Bo.	
Ind	ex start from 1,'*	' means 'all'.		
1.If		n board is:1-*-*,it means a	ll the scan boards of	
2. If the	the position of sca first port in the fi	n board is:1-1-*,it means a rst sending board;	ll the scan boards of	
		n board is:1-1-1, it means first sending board;	the first scan board	

Fig. 5-31 the Send by Address page

Shown in Fig.5-31 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.



Fig. 5-32 the Send by Topology page

Shown in Fig.5-32 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 (Fig.5-2). Shown in Fig.5-33 is the Sending Board page. Adjust the parameters in the **Set the sending board display mode** panel as required.

Sending Board Sca	an Board Screen C	onnection		
Current Display Mode	lode			
Sending Board Resolution:	1440 x 900	Graphics output resolution:	1440 x 900	Refresh
Set the sending b	oard display mode-			
Resolution:	1440 x 900 px	Custom:	1440 🌲 🗴	900 🗘
Refresh Rate:	60	✓ Hz		Set

Fig. 5-33 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.

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#### Custom

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.

# 5.1.6 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.5-34 is panel on the Sending Board page for Hot Backup Setting.

ſ	lot Ba	ickup Setting			
		Master De	evice	Slave D	evice
		Master Sending Board Index	Master Port Index	Slave Sending Board Index	Slave Port Index
Þ	1	1	1	1	4
			XP		
	Refr	esh	S'	Add	dit Delete

Fig. 5-34 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.

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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.5-35.

Master Sending Board Index:	1	\$ Slave Sending Board Index:	1	
Master Port Index:	1	\$ Slave Port Index:	2	1

Fig. 5-35 the Hot Backup Setting dialog

#### > Step 2

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

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- 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.5-31, 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 Setting panel to change the hardware settings.
  - The sending board that is used for LED display configuration (refer to <u>5.1.2.2 LED</u> <u>Display Configuration</u>) can't set as a slave device unless the LED display configuration information on it has been deleted.

# > Step 3

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

# 5.1.7 HDMI Settings (MSD600/MCTRL600/MCTRL610)

Sending cards supporting HDMI interface need to set this option.

#### Fig. 5-36 HDMI Settings

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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.

# 5.1.8 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 (Fig.5-2).

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

# 5.1.9 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 <u>5.1.2.1 Smart Setting -> Step 9</u> for details). Shown in Fig.5-37 is the dialog for saving module settings to a module configuration file.



Note: You can save modu	le to file or cabinet database for later using.
Module Name:	
⊙ Option 1: Save mo	dule to file
File Path:	Browse
🔿 Option 2: Save mo	dule to database
Cabinet Database	Change Database View

Fig. 5-37 the dialog for saving module setting to a module configuration file

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.5-3	88 is <b>Mod</b> u	ule Info	panel of the I	Receiver	Card page	e that the	»	button is on.
	Sending Board	Scan Board	Screen Connection					

~ Module Info-						
Chip:	Common C	Size:	16W×16H	Scan Type:	Static	
Direction:	Horizontal	Decode Type:	74HC138 Decodina	Data Group:	8	

Fig. 5-38 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.5-39 is the **Scan Board** page.



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🔜 Screen Config	-						
Sending Board Scan B	Board Screen Conn	ection					
		Bize: Decode Type:	32W×32H 74HC138 Decodi	Scan Type: ng Data Group:	1/16 scan 2	>>	
Cabinet Into							
<ul> <li>Regular</li> <li>Pixel Width:</li> <li>Pixel Height:</li> <li>Module Casc</li> </ul>	32 🗘 <=	96 Plea make s 256 the wi and he	sure Via	gular dth: ?? Heio adino error. Please ao Construct		Please make sure the width and height	
Performance Settir	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	-		
Line Change T	3	(0~19)					
Brightness Effi	52.31%		Min OE:	24 ns			
Smart Setting			Load File	Save File R	ead From HW	Send To HW	
				Save Confi	g File	Save CI	ose

Fig. 5-39 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.5-40 is the Screen Configuration page.



😸 Screen Config-CO <b>I</b> 19	
Sending Board Scan Board Screen Conne	sction
Screen1	Screen N 1 Config
Screen Type: O Simple Screen Basic Information Location: X: 500 Y: Operate Port	O     Virtual Mo     Enable       Scan Board     Scan Board
Sending Board Index	Columns: 3 Scall Board 2 Reset All Hide Line
I         Port Index         I       2       3       4         Back       Clear Port         Scan Board Size       Width:       128       28         Heioht:       128       28       28	1         2         3           Sending#:1         Sending#:1         Port:1         Port:1           1         Scan Be:3         Ccan Be:2         Ccan E:5           Width:128         Width:128         Width:128           Height:28         Height:128         Height:128           Sending#:1         Port:1         Port:1           Port:1         Port:1         Port:1           Vidth:128         Width:128         Height:128           Width:128         Width:128         Height:128           Width:128         Height:128         Height:128
Set Blank	
Note:Click or drag led	ft mouse button to config screen, right mouse button to ca
Detect Status	Read File Save File Read from HW Send To HW
Factory Restore	Save Config File Save Close

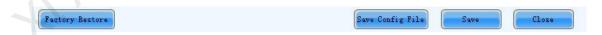
Fig. 5-40 the Screen Configuration page

> 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 current gain adjustment.

# 5.2.1 Manual Adjustment

Select **Manual** in the **Adjustment Mode** panel to open manual adjustment page. Shown in Fig.5-41 is the manual setting page of the **Display Adjustment** window.

Adjustment Mode Manual  © Schee	1 Config © Au	to Config
Display Quality		Gamma Adjustment
Soft Mode	Enhanced Mode	Fixed Value
Brightness Adjustment Enable Brightness Mode	Table	Mode A Mode B
•	100	
	(39.2%)	Custom Gamma Ta
Color Temperature Adjustm	ent	
Custom Gain	Read chip type failed	RGB Brightness
R: A	▶ 100 %	٠
Gi	▶ 100 %	6500 K
B: <	► 100 %	
Synchronous		
	Default Value	Advanced M
Color Temperature Brigh	tness Mode	Refresh Save To Hardv

Fig. 5-41 the manual adjustment page of the Display Adjustment window

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#### **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**

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.

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



đØ

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,

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

Generating the gamma table fastly by adjusting the Gamma curves	table.	dit certain val	Lue In Gamma
X-Axis: 👂 🚔 255 🚔	Х	Y	A Move U
Y-Axis: 0 🚖 _ 65535 🖨	▶ 0	0	
Gamma Value 🔨 📄 🕨 2.1	1	1	Move Do
	2	2	Save
Recommended Gamma	3	6	
Original O AMode O B Mode	4	11	Load
	5	17	
	6	25	
	7	34	
	8	46	
	9	58	
	10	73	
	11	89	
	12	107	
	13	126	
	14	148	
	15	550	
	16	196	-

Fig. 5-42 Gamma Adjustment



# 5.2.1.2 Configure Color Temperature Table

Operate Note							
Selected color te	-	yellow.					
'Add' - Add color	-						
'Delete' - Delete	-						
'Edit' - Edit sel	ected color to	emperature					
Color Temperature	Brightness	R Gain	G Gain	B Gain	R Brightness	G Brightness	B Bright
	100%	100.00%	100.00%	100.00%	255 (100. 0%)	255 (100. 0%)	255 (100. 0
	90%	100.00%	100.00%	100.00%	229 (89. 8%)	229 (89. 8%)	229 (89. 8%
9600	80%	100.00%	100.00%	100.00%	204 (80. 0%)	204 (80. 0%)	204 (80. 0%
	70%	100.00%	100.00%	100.00%	178 (69. 8%)	178 (69. 8%)	178 (69. 8%
9100	100%	100.00%	100.00%	100.00%	255 (100, 0%)	255 (100, 0%)	255 (100. 0
	90%	100.00%	100.00%	100.00%	229 (89. 8%)	229 (89. 8%)	229 (89. 8%
	80%	100.00%	100.00%	100.00%	204 (80. 0%)	204 (80. 0%)	204 (80. 0%
	70%	100.00%	100.00%	100.00%	178 (69. 8%)	178 (69, 8%)	178 (69. 8%
<							

Fig. 5-43 Configure Color Temperature Table



# 5.2.1.3 Configure Brightness Mode

Standard	Name	Refresh Rate	Accelerate Rate	Gray Scale	Gray Mode	Low Gray Compensatio	Max Load A	-
	ModeB	1200	20	Normal 8192	Performan	0	48 * 64	Ē
$\checkmark$	ModeA	960	4	Normal 4096	Refresh Ra	0	66 * 64	T at alle tet s
								~
							)•\	
							).,	
							)•)	

Fig. 5-44 Configure Brightness Mode

#### Standard

If one option was set as standard, the software will adjust the brightness of the screen when

Enable Brightness Mode Table is unchecked in the Manual Adjust Page.

#### **Edit Parameters**

Click and edit the information of the selected mode.

# 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.5-45 is the **Config Schedule File** window. Create the schedule (time table) for adjustment and NovaLCT-Mars will perform the adjustment operations automatically according to the schedule.



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



onfig 3	Schedual Fil	e					E	K
The retr	y number when ad	ljustm	Add schedule		×			
C Enabl	.e Bright Mode Ta	able	-Edit Schedual		h			
Time	Enable Brightness Mode Table	Col: Temj	Start Selen	18:00 🗢		ma Mode	Gamma Value	
8:00	No		Color Temperatur	9600 💙		ed Value	2.8	
9:00	No		Brightness	100 💉 %		ed Value	2.8	
9:10	No		🛃 Adjust Gamma			ed Value	2.8	
			Gamma Fixed Value Custom	Gamma Table				
Add	Edit	Delete	Add	Exit		OK Ca	ncel Apply	

Fig. 5-46 the Config Schedule File window

# Note :

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

2. As it show in Fig.5-46, the **Enable Bright Mode** option can be selected only when

the Bright Mode Table is configured in the Manual Adjust Page.

# 5.2.3 Auto Adjustment

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.



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Display Adjustment
COM3-Screen1
Adjustment Mode
Manual      Sched     Config     Auto     Config
Auto Hardware Brightness
Brightn 0 R: 0 G: 0 B: 0 Refresh
Failed to get Data!
'Auto': Adjust brightness according to
enviroment brightness! Please click 'Config'!
Trease crick config :
×
Read Scan Board Parameters, result-failed!Reason: time out

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.





ight Sensor for Aut	o Brightness						
Stat   Index   A	ddress						
						2	
The retry number v failed:	when adjustment		2	*			
Caculate Type of Lu	x						
<ul> <li>Average of all li</li> </ul>	ight sensor		Average after minimum	remove m	aximum and	t	
djustive Relationsh	nip of Auto Brightn	ess					
Enable Bright	-						
Fixed Color Temperature				~			
Environment	t Brightn	:	Screen Brigh	ntness			
Above	100	lux —>	80	\$ %			
Linear adiustmer	nt between mininu	um and max	tinum				
Numbers of S	<			> 10			
			5	\$ %			
Below	10 🗘	iux —>		70			

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.





ndex Address		Value	Operate
COM6-Sending Board 1-Light	t Sensor	80	Read
sensor of function card			
can config light sensor of f		'Ennction Card	nagal
can contre itent sensor or a	tunction card in		Page:
Index Address	function card in	Value	Operate

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.

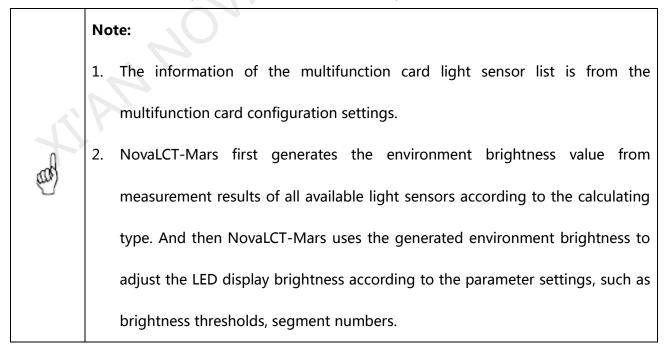


Environmen	t Brightn	Screen Brightness	
Above	100 🗘 lux -	-> 80 🗘	%
Linear adiustme Numbers of S	nt between mininum and	maxinum	Linear adjustment
Below	10 🗘 lux	_> 5	%
Advanced Setu		ОК	Cancel

Fig. 5-50 Segment interval setting

		Ambient Brightness	Screen Brightness
	1	200	100
	2	100	80
1	3	20	30
*	4		
Ge	ner	al Setup	OK

Fig. 5-51 Several thresholds tet for segment intervals





### 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

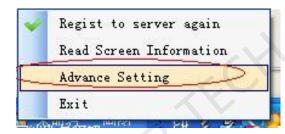


Fig. 5-53 the pop up menu

	30 🗘 Day	rs
Auto Adjustment Detect Period:	information 10 🗘 S	
Read times of li	ght sensors: 5	
light sensor after removin	doing every aute adjustment value N times, and caculate ; maximum and minimum, then ; ording to this average valu ; vou set!	the average value we adjust screen

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.

# 5.3 **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. Shown in Fig.5-55 is the **Display Control** window.



Screen	Control			
COM6-Ser	een1			
	Kill	Lock	Run	
Sel:	f Test	*	Send	
				Close

Fig. 5-55 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.

# 5.4 Check Hardware Info

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

page. Shown in Fig.5-56 is the Hardware Information page.



Hardware Information
Time
Time of Hardware: 2012-06-12 17:12:42 🗢 Read Set
-Select Serial Port
Current Serial Port: COM4 💌
Sending Board SM
Serial Number SN Number
1 1202-1000-0000-0199
Refresh
Hardware Version Info
💽 Refresh All 🔿 Refresh One 🛛 Sending Board: 🚺 🤤 Port: 1 🤤 Scan Board: 1 🔹 🛛 Refresh
🖃 V5.2.1.0 Total 1, Remarks:2012.05.23
Position:Sending#1
Sending Board MCU Sending Board FPGA Scan Board FPGA
Communication Info
2012-6-12 19:32:15Current control system address:1 port 3 Read FFGA program version of sca 📤
2012-6-12 19:32:15Current control system address:1 port 4 Read FPGA program version of sca 🗸 🔽 Clear
Current control system address:1 port 4 Read FPGA program version of scan board 0 .

Fig. 5-56 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:

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.5-57 is the Combination Display Config

window



bination Display Config			
Combination Display Count: 1	Config	Clear	
			53
		OK	Close

Fig. 5-57 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.5-58. Here **Screen Count** is 3, thus there are 3 colored rectangles labeled 1, 2 and 3 respectively in the sketch map.





Combination Display	Count: 1	Config	
Name:	1		
Screen Count:	3		
Zoom:		0.1	
	?	0.	

Fig. 5-58 combination display setting page 1

#### > Step 2

Click left button of the rectangle labeled 1 to Screen information window, as shown in Fig.5-59. 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.



een inform ial ports:			
e screen 1:			
1 2	3		

Fig. 5-59 the Screen information window

#### **Serial ports**

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 Displa	ay Count: 1 📚	Config
Name: Screen Count: Zoom:	1 3 🗘	Config Reset
1 2 COM6-Screen1	COM6-Screen2	\$ COM6-Screen3
<	un .	

Fig. 5-60 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

Monitoring is one of the key features of the Mars serial LED display control systems. The monitoring subsystem performs comprehensive monitoring on the overall LED display. The monitored parameters and status include system components working status, cabinet door status (open/close) and temperature, humidity, smoke, fans status and power supply. The monitoring subsystem can also report error by email when fails detected.

Shown below is the Monitor page. The status and parameters mentioned above can all be



watched here.

🔜 Lonitor	r – Sending	Board Status			
	c - Sending	Board Status		OK DVI Exception	Refresh Monitor Setting Email Setting Email Log Monitor-Control
	Refresh Period:	None	The time to next refresh:	Unknown None	Control Log
	:48:28COM3:读监				<u>^</u>
	:48:28开始读发)				
	:48:28读监控信, m) Information				
rault (Alarn	m) information	Communication List			
读监控信息结	束!				.::

Fig. 5-61 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

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subsystem.

## 5.6.1 Monitor Setting

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

Shown in Fig.5-62 is the Monitor Setting page.

Auto Refresh       Period:       80       5         ry times Setting       Retry times after read status failed:       1       Times         resh and Alarn Setting       Image: Setting       Image: Setting         effresh Setting       Image: Setting       Image: Setting         Image: Setting
Retry times after read   status failed:   Times resh and Alarm Setting efresh Status Image: Refresh Temperature Image: Refresh Status Image: Refresh Temperature Image: Refresh Temperature Image: Refresh Status Image: Refresh Temperature
status failed: resh and Alarm Setting efresh Setting P Refresh Status P Refresh Temperature P Refresh power of scan board Connect Monitor Board Connect Monitor Board Refresh Humidity Refresh Smoke Refresh cabinet status Refresh status of Cabinet-Door Refresh Fan P Refresh Fan P Refresh Fan Refresh at different number of fan Every cabinet has same number of fan Every cabinet has same number of fan Every cabinet has same number of power Every cabinet has same number of power Every cabinet has different number of power Every cabinet has same number of power Every cabinet has different
efresh Setting Refresh Status Refresh Temperature Refresh power of scan board Connect Monitor Board Refresh Hunidity Refresh Smoke Refresh cabinet status Refresh status of Cabinet-Door Refresh Fan Setting Refresh power of monitor board Refresh power of power Refresh power of monitor board Refresh power of power <prefresh of="" p="" power="" power<=""> Refresh power of power Re</prefresh>
<ul> <li>Refresh Status</li> <li>Refresh Temperature</li> <li>Refresh power of scan board</li> <li>Connect Monitor Board</li> <li>Refresh Humidity</li> <li>Refresh Smoke</li> <li>Refresh cabinet status</li> <li>Refresh status of Cabinet-Door</li> <li>Refresh Fan</li> <li>Every cabinet has same number of fan</li> <li>Every cabinet has different number of fan</li> <li>Setting</li> <li>Every cabinet has same number of power</li> <li>Every cabinet has different number of power</li> <li>Every cabinet has different number of power</li> <li>Every cabinet has different number of power</li> <li>Setting</li> </ul>
<ul> <li>✓ Connect Monitor Board</li> <li>✓ Refresh Hunidity</li> <li>✓ Refresh Smoke</li> <li>← Refresh cabinet status</li> <li>✓ Refresh Fan</li> <li>④ Every cabinet has same number of fan</li> <li>← Every cabinet has different number of fan</li> <li>✓ Refresh power of monitor board</li> <li>← Every cabinet has same number of power</li> <li>⑧ Every cabinet has different number of power</li> <li>● Every cabinet has different has different number has different has diff</li></ul>
<ul> <li>Refresh Humidity Refresh Smoke</li> <li>Refresh cabinet status Refresh status of Cabinet-Door</li> <li>Refresh Fan</li> <li>Every cabinet has same number of fan</li> <li>Every cabinet has different number of fan</li> <li>Every cabinet has same number of power</li> <li>Every cabinet has different nu</li></ul>
<ul> <li>Kefresh Humidity Mefresh Smoke Refresh Cabinet Status Cabinet Door</li> <li>Refresh Fan</li> <li>Every cabinet has same number of fan</li> <li>Every cabinet has different number of fan</li> <li>Every cabinet has same number of power</li> <li>Every cabinet has different number of power</li> <li>Ever</li></ul>
<ul> <li>Every cabinet has same number of fan Every cabinet has different number of fan</li> <li>Refresh power of monitor board</li> <li>Every cabinet has same number of power</li> <li>Every cabinet has different number of power</li> <li>Every cabinet has different number of power</li> <li>Setting</li> </ul>
Every cabinet has different number of fan Refresh power of monitor board Fivery cabinet has same number of power Every cabinet has different number of power Every cabinet has different number of power Setting larm Setting When temperature > 80 C, display alarm information. When humidity > 80 String K, display alarm information.
Every cabinet has different number of fan Refresh power of monitor board Fivery cabinet has same number of power Every cabinet has different number of power Every cabinet has different number of power Setting larm Setting When temperature > 80 C, display alarm information. When humidity > 80 String K, display alarm information.
Refresh power of monitor board Every cabinet has same number of power Every cabinet has different number of power Setting larm Setting When temperature When humidity 80 %, display alarm information.
Big       Big         Every cabinet has same number of power       Setting         Every cabinet has different number of power       Setting         larm Setting       Setting         When temperature       60       C, display alarm information.         When humidity       80       X, display alarm information.
Every cabinet has different number of power Setting larm Setting When temperature > 60   C, display alarm information. When humidity > 80   X, display alarm information.
larm Setting When temperature > 60 C, display alarm information. When humidity > 60 S %, display alarm information.
When temperature       60       C, display alarm information.         When humidity       60       X, display alarm information.
When temperature       60       C, display alarm information.         When humidity       60       X, display alarm information.
nnen temperature > 60 C, display alarm information. When humidity > 60 S, display alarm information.
When humidity > 60 📚 %, display alarm information.
humidity 200 😴 %, display alarm information.
When speed < 1000 🗢 speed/min, display alarm information.
When voltage < 4 V, display alarm information.
y, display alarm information.

Fig. 5-62 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**

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

#### Every cabinet has same number of fan

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**

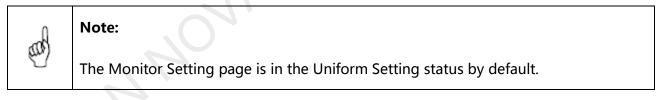
Click this to set the monitoring options for each display individually. Shown in Fig.5-63 is the **Monitoring Setting** page for individual display monitoring option setting. The **Ever cabinet has different number of fan** and the **Every cabinet has different number of power** are available in this 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.





Auto Refresh Period	60	S	
ry times Setting Retry times after read status failed: resh and Alarm Setting	1	Times	
M6-Screen1 COM6-Screen2 COM6-	Screen3		
Refr <del>esh Setting</del>	Refresh Temperature	e 📝 Refresh power of scan board	)
🔽 Connect Monitor Board			
🔽 Refresh Humidity 🛛 🗹	Refresh Smoke	🦳 Refresh cabinet status 🛛 🔽 Cabine	sh status of et-Door
🖌 Refresh Fan		and the second sec	
O Every cabinet has sa	ne number of fan		
💿 Every cabinet has di	fferent number of f	an Setting	
Refresh power of monitor	board		
O Every cabinet has sa	ne number of power	8	
Every cabinet has di	fferent number of p	ower Setting	
llarm Setting		Fahrenheit Tempe	rture
When > 60 temperature	🗘 °C, di sı	play alarm information.	
When > 60 humidity	😂 %, di spl	lay alarm information.	
	🤤 speed/r	min, display alarm information.	
When speed < 1000			

Fig. 5-63 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.5-62 )to open the individual display Monitor Setting page (Fig.5-63).

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

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

in Fig.5-64 is the page for fan number setting for each cabinet.

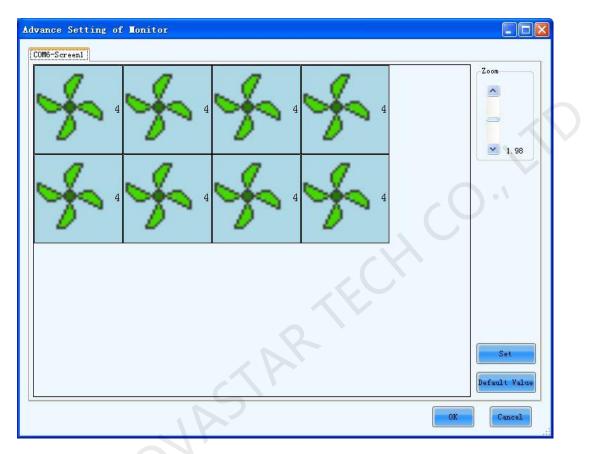


Fig. 5-64 the Advance Setting of Monitor page for fan number setting

## 5.6.2 Email Notification Setting

Shown in Fig.5-65 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".





	Of Enail tion Setting-	Notific	ation About	Sonitor Faul	lt	×
🗌 Ena	ible Email N ible Svstem					
🗌 Ena	ble Sendina	I Svstem	Report Email			
Set	Regular Se	ndina of (	Svstem Operatio	on Report Emai	I	
-Email S	Sender					
Email	Addres Passw Server:	NovaSta		m		
Port:		25	0.0011			
Modify	Sender				Use Defa	ult
Recipie	ent					$\equiv$
	Name		Email	Address		
Email li	nformation – From:	A-1		(e.g.;Ne Square	eighborhood B)	Α,
-Log Set	ting Enable Loo		Saving Time	Of Loa : 7	👻 Davs	
		Ś		Apply	Close	

Fig. 5-65 the email notification setting page

## 5.6.3 Notification Email Log

Shown in Fig.5-66 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. 5-66 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)	Detail
	1	Temperature $>$ 32°C, brightness decrease 50%, Temperat	A11		1	×	
:	2	Temperature > 70°C, brightness decrease 50%, Temperat	A11		1	×	

Fig. 5-67 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.5-67. As it show in Fig.5-68 is to add one temperature control information, as it show in Fig.5-69 is to add one smoke control information.

Display Number:	All		
Control Information			
Control Type:	Temperature Control		
	ghtness The maximu 60 🔄 < X <	The averad	Ű
Brightness decrease	50 🔶 %		
Open Cooling Dev	rice		
O Power Off			

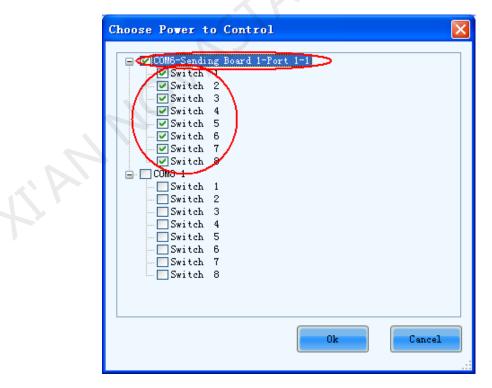
Fig. 5-68 Temperature Control Information



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

#### Fig. 5-69 Smoke Control Information



#### Fig. 5-70 Select The Controlled Power

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## 5.6.4.2 Monitor-Control Log

	or-Control Lo	e contraction of the second seco	
late:	Wednesday,	April 18, 2012 M	Delete Log
Log Information	L		]
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. 5-71 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.5-72 is the information which comes from the last control.



Fig. 5-72 Control Information In The Monitor Page

Click this link label to view the controlled information list as it show in Fig.5-73.



Fi	nished C	ontrol		×
	Finishe	ed Control —	Restore Control	>
	Time	Display Name	Control Information	
<	15:43:53	COM6-Screen1	Temperature > 32°C, brightness decrease 50%	
1	View I		Exit	
$\sim$				

Fig. 5-73 View The Control Information List

#### **Recover Control**

If the control scheme is performed (View <u>5.6.4.1 Configure Control Scheme</u> to configure the control scheme), and the user can restart monitor-control by clicking this button after dealing with the fault.

with the fault

### View Log

Open the log-window and view the stored logs.

# 5.7 Check the LED Lights Status

The LED lights status checking function, also known as point 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.

	No	te:
aab	1.	Point 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 point detect at present are MBI5036, MBI5034, MBI5040, DM13H and MBI5030.
 Monitor boards for Mars serial LED display control systems are required for point detect.

Select **Tool** ->**Point Detect** from the NovaLCT-Mars main menu to open the **Point Detect** window for point detect setting. Shown in Fig.5-74 is the Point Detect window. As shown in the figure, the LED display under point 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.

Serial Port: COM6	~				
Screenl					
Screen Topological Graph	1				
					Zoom
					<u>~</u>
		•			-
					1.0
					Unknown
		0			Error
	Sec. 1				Normal
					No Monito Card
					0.00
Point Detect Parameters					
Point Detect Parameters Detect Type:	Open Circuit A	und Short Circuit			
		und Short Circuit	© 3	© 4	
Detect Type:			© 3	۹ (	
Detect Type: Threshold Current:	© 1	© 2	) 3		Stop
Detect Type: Threshold Current:	© 1	© 2 Change Setting	George		) Stop
Detect Type: Threshold Current:	© 1	© 2 Change Setting	George		)
Detect Type: Threshold Current:	⑦ 1 ☑ Enable	© 2 <u>Change Setting</u> Detect Screen	Detect Selec	ted Pause	
Detect Type: Threshold Current: Current Gain	1 I Enable and Physics Addr.	2 Change Setting Detect Screen esc(1, 1. Stdefended point	Detect Selec	ted Pause	al led <sup>1</sup> Keeson

Fig. 5-74 the Point Detect window

## Serial Port Selected

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



computer.

#### **Point Detect Parameters**

- > **Detect Type** --- this is the LED lights status type can be checked.
- > **Threshold Current** --- set the current threshold for point 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 point detect on the whole display.

#### **Detect Selected**

Click this button to perform point detect on (the pixel array of) the selected receiver cards.

#### Pause

Click this button to pause the ongoing point detect operation.

#### Stop

Click this button to stop the ongoing point 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 point detect operation will be shown in this panel.

#### Colors of the LED display sketch map

- Gray --- the point 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:
ß	1. Put the curse on the sketch map of a cabinet to show its information.
and	2. Module specifications have effect on the point detect result. Please set the
	point detect parameters according to the module type.

In Fig.5-73 click on the cabinet in the sketch map to open the **Point Detect Result of Modules** window for details about LED lights status information. Shown in Fig.5-75 is the **Point Detect** 



Fig. 5-75 the Point Detect Result of Modules

Shown on the left of Fig.5-75 is the module array of the cabinet and on the right the pixel array of

the selected module in the module array.

#### Red A

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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 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.5-76 is the page for online calibration.



🔜 Screen Calibr	ation 🛛
Current Serial Port	Online Calibration Offline Calibration Manage Coefficients       Network Setting       Local IP:     192.168.0.175       Port:     8080
Current Screen.	Communication Log 18:01:27 Listening succeed
Enable/Disnable Calibraion Calibration Calibration Save	Save Clear

Fig. 5-76 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.

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#### 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.5-77 is the Manage Coefficients page.



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

Fig. 5-77 the Manage Coefficients page

#### **Upload Coefficients**

Upload a calibration coefficients data base 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 to the LED display thus the LED display control

system can use the coefficients to improve the image quality of the display.

#### Step 1

elect Database:	D:\ScreenCoefficie	ent.mdb			Browse	
уре:	Screen Database	Cabinet ID:		~		
olumns:	512	Rows:	256			
liscription:	mj					

Fig. 5-78 the page for upload coefficients step 1

#### Browse

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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.

## **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.

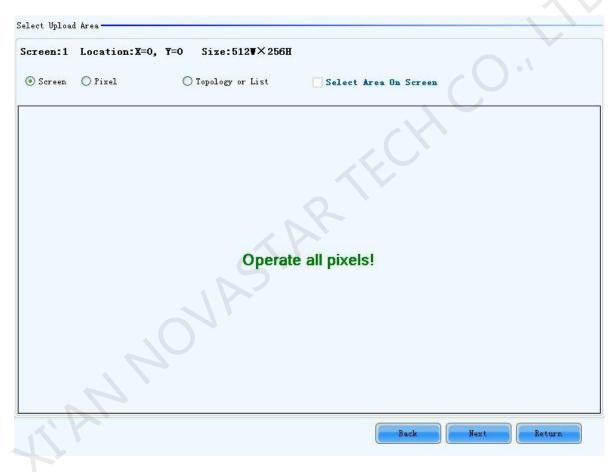


Fig. 5-79 the page for uploading calibration coefficients in Screen way



	TAR

reen:1 Locatio	on:X=0, Y=0	Size:512 <b>W</b> ×256H	
) Screen 💿 Pixel	C	Topology or List	Select Area On Screen
Start Columns	,o	*	
Start Rows of		÷	
Width:	512	\$	
Height:	256	\$	

Fig. 5-80 the page for uploading calibration coefficients in Pixel way

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

Fig. 5-81 the page for uploading calibration coefficients in Topology or List way



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

#### > Step 3

Shown in Fig.5-82is the page for Step 3.

Vpload Coefficients				
	💿 Fast Upload	🔘 Stable Upload	Upload	Save
				10
~	Ċ	KP.		
			Back Finish	Return

Fig. 5-82 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

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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.5-83 and Fig.5-84 are the pages for saving coefficients to an existing database and a

new database respectively.

Select Database:					Open
Туре:	Unknown	Existing Cabinet ID:		~	
Columns:	Unknown	Rows:	Unknown		
Discription:	Unknown				

Fig. 5-83 the page for saving calibration coefficients to an existing database



### 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 Typ	e: 💿 Scree	n-Database 🔿 Cabinet-I	Database	< O · 1
Select Database:				Create
Туре:	Unknown	Existing Cabinet ID:		
Columns:	Unknown	Rows:	Unknown	
Discription:	Unknown			

Fig. 5-84 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.

### Create

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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.5-85 is the page for Step 2.



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

Fig. 5-85 the page for specifying the display area for coefficients saving

### Screen

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

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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.

### 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.5-86

is the page for specifying the area.

<b>Creen:1 Locati</b>		xe: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
AA.	40			

Fig. 5-86 the page for specifying the working area of the new receiver card

### > 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.5-87 and Fig.5-88 show the pages for two option



### respectively.

Select the source of	Coefficients			_
💿 Database	🚫 Refer to :	Surrounding Scan Board	1	
Select Database:	-		Browse	
Туре:	Unknown	Cabinet ID:	₩.	
Columns:	Unknown	Rows:	Unknown	
Discription:	Unknown			
2				
			Back Next Return	

Fig. 5-87 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

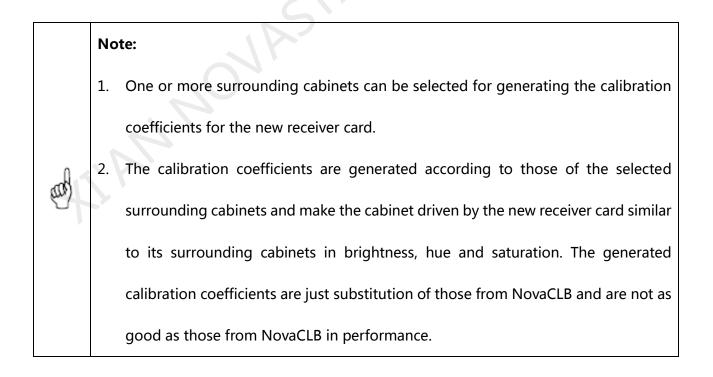
If the selected database is a cabinet database, the IDs of the cabinets of which the calibration coefficients are contained in the database will be list in the drop list. If the selected database is a screen database, the list will be unavailable.



Select the source of	Coefficients		
🔘 Database	💿 Refer to Surrounding Sc	an Board	
Select Reference Cab	inet		
Reference Zone: Adjusted	The set of	-	
Adjusted Cabinet:	Cabinet:	-	
			Back Next Return

Fig. 5-88 the page for generating coefficients for the new receiver card according to those of its surrounding

### receiver cards





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.5-89 and Fig.5-90 are the pages for Simple and Advanced adjustment respectively.

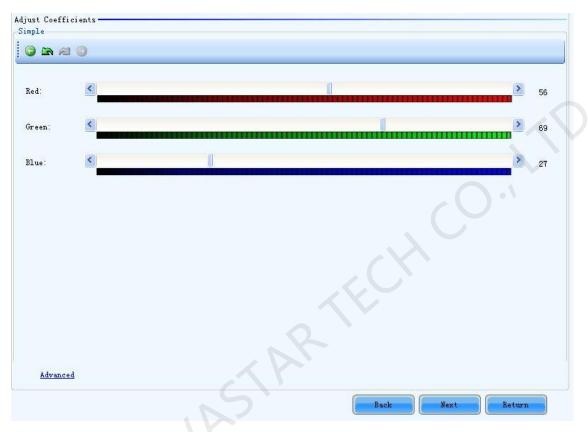


Fig. 5-89 the Simple adjustment page

### 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.

### 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.

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Fig. 5-90 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

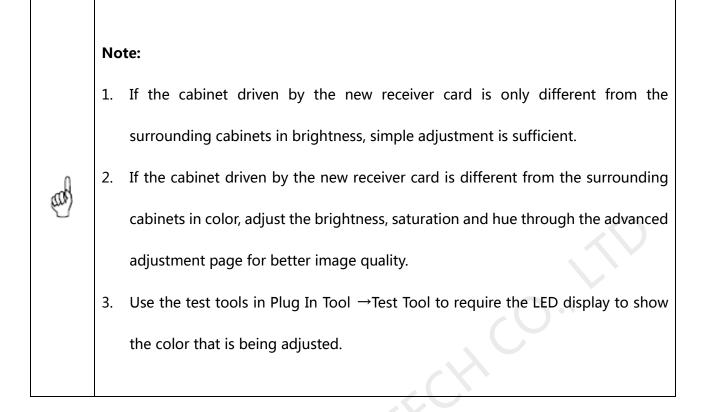
white in the Color Temperature Adjust panel.

### Simple

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.5-91 is the page for saving the coefficients to the hardware. Click the Save button to save the coefficients to the hardware.





Fig. 5-91 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.5-92.



NOVASTAR
----------

Creen:1				ze:256¥×128H blogy 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	
								.\	

Fig. 5-92 the page for specifying the cabinet the new module is in

### > Step 2

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

Fig.5-93 is the page for specifying the new module.

Scan Bo.:(0,0,0)	, Location::(192,0),	Size:64×64		
🔘 Screen 🔵 Pixel	Topology or	List 🗌 Select i	trea On Screen	
Module Size: 16 Display Mode: 💿 Mod				
	2	3	4	
2	Row: 2			
3	Co1:2			
4				
<		ан сан сан сан сан сан сан сан сан сан с		

Fig. 5-93 the page for specifying the new module



### **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.5-94 is the page for selecting the coefficients source.

Select the source of Coefficients				
Refer to Surrounding Modules				
Select Reference Module				
Reference Zone: 🦲 1				
Adjusted Module:	Reference Module:			
		Back	Next	Return
		Dack		necult

Fig. 5-94 the page for selecting the calibration coefficients source

	No	te:										
and	1.	One	or	more	surrounding	modules	can	be	selected	for	generating	the
		calib	ratio	on coef	ficients for th	ie new moo	dule.					



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 <u>5.8.2.3 Set coefficients for a new scan board ->Step 4</u> 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.5-95 shows the page for area selecting.



elect The A	djustive Ar	ea						
Screen:1	Locatio	on:X=100,	¥=100	Size:256V×12	281			
🔿 Screen	reen 🔿 Pixel		💿 Topol	logy or List	Select Are	a On Screen		
(1, 1)	(1, 2)	(1, 3)	(1,4)					Zoom:
(2, 1)	(2, 2)	(2, 3)	(2,4)					
								1.0
								. \
							C	
					(	Back	Next	eturn

Fig. 5-95 the page for selecting the area to be adjusted

### > Step 2

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.5-96 and Fig.5-97 are the page for the two adjustment type respectively.



⊙ Adjust Own Effect	C Effect As Other Selected Area
	Adjust own effect!
	$O^{1}$

Fig. 5-96 the page for Adjust Own Effect option

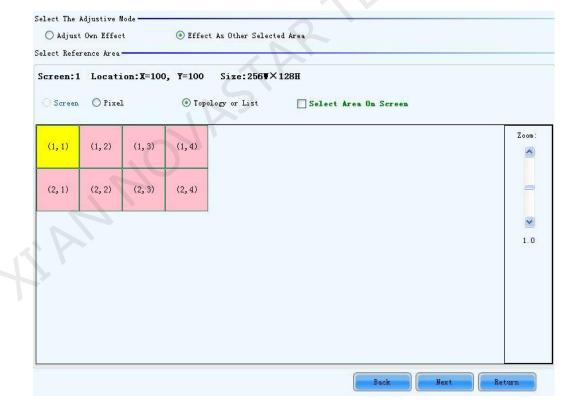


Fig. 5-97 the page for Effect As Other Selected Area

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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 <u>5.8.2.3 Set coefficients for a new scan board ->Step 3</u> 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.5-98 is the page for saving the calibration coefficients.





Fig. 5-98 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.5-98 to open the page for

setting. Shown in Fig.5-99 is the page for Apply The Effect To Other Area.



Apply and Sav	ve Coefficients ————		
Apply The	<u>Effect To Other Area</u>		Save
Apply the Ef	fect to Other Area		
Screen:1	Location:X=100,	Y=100 Size:256W×128H	
💿 Screen	O Pixel	O Topology or List Select Area On Screen	
		Operate all pixels!	
			Apply
		Back Finish	Return

Fig. 5-99 the page for Apply The Effect To Other area

### Apply

Apply adjustment operations to the selected area.

	No	ote:
	1.	If the adjustment operations are to be applied to another area, the problem of
	D	this area should be similar to the area selected in Step 1. Otherwise, don' t
E	, Y	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.5-100 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.

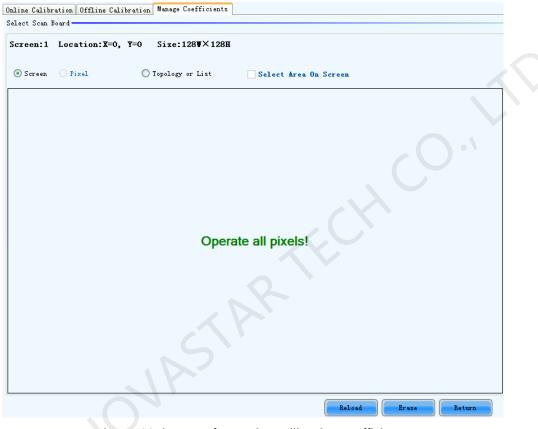


Fig. 5-100 the page for erasing calibration coefficients

### 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.



### Note:

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



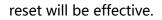
a copy of the calibration coefficients (save to a database file) for safety.

# 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



🖳 Screen Calibration	an an a' air anna 🖉 anna 🖉 anna 🖉
Current operation communication	Online Calibration Offline Calibration Manage Coefficients
COM3 -	Choose to re set the coefficients of the region
	Screen:1 Location:X=0, Y=0 Size:32W×16H
Current Screen	
Screen1	Screen Pixel     Topology or List     Screen
	Set Coefficients
	2047 0 0
	0 2047 0
	0 0 2047
	OK Cancel
Enable/Disnable Calibraion	
Disable •	
Save	ReSet Coeffici Save To HW Return

Fig. 5-101 Reset coefficients

# 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.5-102 is the Function Card Management page when it is opened for the first time.

Function Card Management		<
Add Remove Refresh Rename : + -   ×   ⊘   m   ∞ -	Nonitor Data External Device Load Program Audio management	
		1
Set card count of port:Succeed!		:

Fig. 5-102 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

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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.5-103. Circled in the page is the **Power Management** button.



Power Management	Monitor Data External I		am Audio mana	gement	
Function Card Time- 2013-02-20 Wednes	sdav 10:10: Read	Set	Set Notes	Start Delay	
• • • •		Refresh	Start All	Emergency St	
Manual	Auto	🔘 Softv	vare 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 c	ard:Succeed	<u>^</u>	
2013-2-20 10:11:31St	art power:Succeed				
2013-2-20 10:11:33R	ead the status of all the	powers in function c	ard:Succeed		
Succeed!		0		.:	

Fig. 5-103 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

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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

The page for automatic power control is as shown in Fig.5-104.

	Card Time 17 Tuesday 18:	30:23 Read	Set	Set Notes	Start Delay	
			Refresh	Start All	Emergency Stop	
🔘 Man	ual	( Auto	🔘 Software Cont	trol		
	Start	Stop				
Switch 1:	10:51:30 💲	13:52:30 😂				
Switch 2:	13:51:30 📚	13:52:30 😂				• 1
Switch 3:	13:51:30 🜲	13:52:30 📚				
Switch 4:	13:51:30 📚	13:52:30 📚				
Switch 5:	13:51:30 📚	13:52:30 📚				
Switch 6:	13:51:30 😂	13:52:30 📚				
Switch 7:	13:51:30 😂	13:52:30 📚				
Switch 8:	13:51:30 🜲	13:52:30 📚			~	
				( (	Send	

Fig. 5-104 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.

	Note:
-d	1. In Auto mode, the schedule will be disabled if the <b>Emergency Stop</b> button is
(U)	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.5-105.

O Manual O Auto Software Control	
Custom Control List	
Week Start Time Close Time	
Power Switch:1	
Friday 17:34:03 18:34:03	
Power Switch:2	
Friday 17:34:03 18:34:03	
Power Switch:8	
Friday 17:34:03 18:34:03	

Fig. 5-105 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.

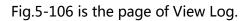
### Paste

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



### **View Log**

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



Address       Operation       Power       Operation       Time       Operation       Result         Stop       1       10:15:00       Succeed       Stop       3       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         Stop       6       10:15:00       Succeed       Stop       3       10:15:00       Succeed         Stop       6       10:15:00       Succeed       Stop       3       10:15:00       Succeed         Stop       8       10:15:00       Succeed       Stop       5       10:15:00       Succeed         Stop       8       10:15:00       Succeed       Succeed       Stop       10:15:00       Succeed       Succeed	lect the Log File: 2012-6-4 g Information-	Mond	ay		
Stop         1         10:15:00         Succeed           Stop         2         10:15:00         Succeed           Stop         4         10:15:00         Succeed           Stop         5         10:15:00         Succeed           Stop         6         10:15:00         Succeed           Stop         6         10:15:00         Succeed           Stop         8         10:15:00         Succeed	Address	Operation Type	Power Switch	Operation Time	Operation Result
Stop         2         10:15:00         Succeed           Stop         3         10:15:00         Succeed           Stop         5         10:15:00         Succeed           Stop         6         10:15:00         Succeed           Stop         7         10:15:00         Succeed           Stop         7         10:15:00         Succeed           Stop         8         10:15:00         Succeed	COM6-Sending Board 1-Port 1-				Succeed
Stop         4         10:15:00         Succeed           Stop         5         10:15:00         Succeed           Stop         6         10:15:00         Succeed           Stop         7         10:15:00         Succeed           Stop         8         10:15:00         Succeed			2	10:15:00	Succeed
Stop         5         10:15:00         Succeed           Stop         6         10:15:00         Succeed           Stop         7         10:15:00         Succeed           Stop         8         10:15:00         Succeed		Stop	3	10:15:00	Succeed
Stop         6         10:15:00         Succeed           Stop         7         10:15:00         Succeed           Stop         8         10:15:00         Succeed		Stop	4	10:15:00	Succeed
Image: Stop         7         10:15:00         Succeed           Stop         8         10:15:00         Succeed		Stop	5	10:15:00	Succeed
Stop 8 10:15:00 Succeed		Stop	6	10:15:00	Succeed
R		Stop	7	10:15:00	Succeed
		Stop	8	10:15:00	Succeed
					Exit

Fig. 5-106 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.5-107 is the page for editing the schedule.



NovaStar Tech Co.,Ltd

ustom Control List of power Delete Clear	Custom Edit Area Power Switch
Week Start Time Close Time	Switch 1 Switch 2 Switch 3
Power Switch:1	Switch 7 Switch 8
Friday 17:34:03 18:34:03	Date
Power Switch:2	mon. 🗌 Tues. 🗌 Wed
Friday 17:34:03 18:34:03	Thur. Fri. Sat.
Power Switch:8	Sun
Friday 17:34:03 18:34:03	Time Start Time: 09:02:15 Close Time: 09:02:15 Add
	OK Cancel

Fig. 5-107 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.5-108 is the page for system monitoring.

Power	Management	Monitor Data	External Device	Load Program	Audio manageme	ent
Monito	r Data of Funct	ion Card				
- 111	Temperatu	29°C				
- <i>-</i> ?	Humiditv:	29%				
22	Voltade:	4.2V				
	ļ	No mo	nitor boa	rd!		
						Refresh

Fig. 5-108 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.5-109 is the page of External Device.

### Refresh

This is to refresh the information of the external devices.



### 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.

Power Management Moni	itor Data External Device Load Program Audio management click 'Save' button after modify!	
External device 1:	Light Sensor 🗸	
External device 2:	Light Sensor V	
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. 5-109 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.5-110 is the page of program loading.





Power Management	Monitor Data	External Device	Load Program	Audio managem	nent
Function Card Inform	ation				
Model ID:	81.0	1			
FPGA Version:	03.0	2 00 02			
FPGA Note:	多功	能卡App程序 版本	号V3.2.0.2		Refresh
	Fig. 5-11	0 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.5-111 is the page

with the program loading options.

Function Card Informat	ion
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
	Refr
<ul> <li>Load program for s card(COM17)</li> </ul>	elected function O Load program for all function card
Select Program	
Program Name:	
Program Version:	
Program Pat	

Fig. 5-111 the page with program loading options

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### Exit

Click this button to go back to the page shown in Fig.5-110.

### 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.5-110 will change to the one shown in Fig.5-111. 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.5-112 will appear for open or create a library.



Fig. 5-112 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.5-113 is the page for module management.



		ř	17		- D'	1 0 1		P	10000	P.	_	<b>D</b> .	<b>D</b> .			<b>a</b> 1.1	82			1000
<ul> <li>Show All</li> <li>Search by Cond:</li> </ul>			1	Name Pixel Columns Pixel Rows MBI5036 32 16				_	Data Direction Horizontal			Chip MBI5036		Scan Type						
Search Condition—																				
✓ Select All	1																			
🔽 Data Direction	Horizontal	4																		
Chip	Common Chip	1																		
(V) Chi p	o vinitore orea p		1000																	
Scan Type	Static		<	2 3	4	56	7 8	9	10	11 1	2 13	14 1	5 16	17	18	19 2	0 21	22	23 2	4
		> >	1 1 🗛	2 3 2 3	4	56 56	7 8 7					14 1							23 2 23 2	
Scan Type	Static	S S	1		4	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -														
Scan Type	Static Static	>	1 1 A 2 B		4	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -														
<ul> <li>✓ Scan Type</li> <li>✓ Encoding Mode</li> <li>✓ OE Polarity</li> </ul>	Static Static High Effecti	X	1 1 A 2 B 3 C		4	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -														

Fig. 5-113 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.5-114 is the page for cabinet management.

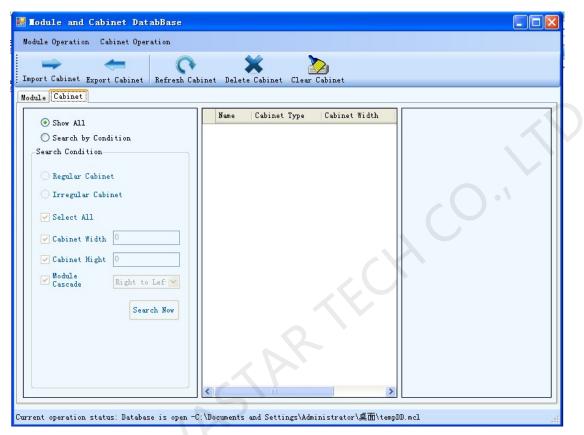


Fig. 5-114 the page for cabinet management

### **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	*	
Screen1		
-Prestore Picture Set	tings	
Select Picture:		Browse
-Effect Settings		
<ul> <li>Screen Effect</li> </ul>	Stretch 💌	
🔘 Cabinet Effect	Stretch	Test Effect
	Save To Hardware	Check Store Picture
Function Settings	7	
Boot Screen		
Enable	Time: 2	2
Cable Disconnect		
Slack	🔘 Last Frame	Prestore Picture
No DVI Signal		
💽 Black	🔵 Last Frame	Prestore Picture
(	Send	Save To Hardware

Fig. 5-115 Prestore Picture Setting

#### 1) Prestore Picture Setting

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

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**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:

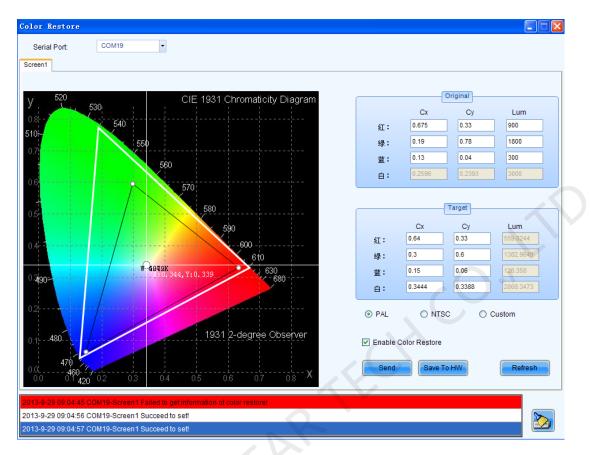


Fig. 5-116 change the color temperature of the white point



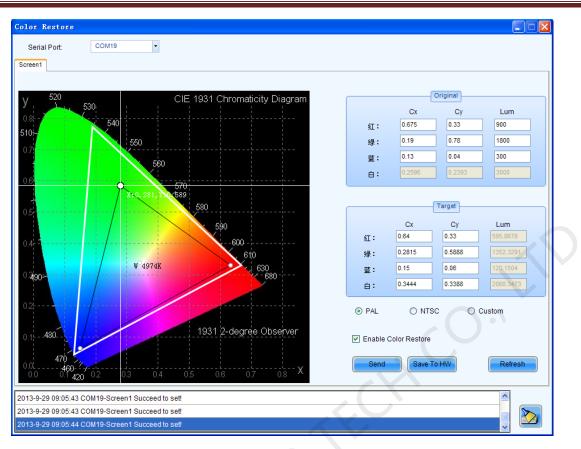


Fig. 5-117 change the scope of the color gamut

#### **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.5-116 and 5-117. 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 Light Panel Flash

Click the option "Light Panel Flash (U)" in Tools, and open the light panel Flash operation

interface, as you can see in the figure:

System(S)       Tools(C)       Plug-In Tool(P)       User(U)       Language(Lang)(L)       Help(H)         Screen Config(S)       Bightness(B)       Calibration(C)       Display Control(P)       Monitor       Monitor         Control System       Display Control(P)       Monitor (M)       Wontor (M)       0       View Detail         Monitor Info       Hardware Information(H)       Multiple Screen Management(A)       0       View Detail         Predictor Picture(R)       Color Restore(C)       Light Panel Flash(U)       Server Status:       Receive Card relay(I)         Server Status:       Receive Card relay(I)       MultiBatch of Adgustment(M)       660Configuration(E)       Server Status:         Server Status:       Server Card relay(I)       MultiBatch of Adgustment(M)       Server Status:       Server Status:         Receive Card relay(I)       MultiBatch of Adgustment(M)       660Configuration(E)       Size status:       Server Status:         Server Status:       Server Status:       Server Plug       Topology Or List       Selvect Area 0n         Server Status:       Server Plug       Topology Or List       Selvect Area 0n         Server Plug       Server Plug       Topology Or List       Selvect Area 0n         Server Plug       Disecoefficients in Module       Seve coefficient	MovaLCT-M	lars V4.2.0(No Hardware)
Bightness(B) Calibration(C) Local System Nonitor(II) Function Card(F) Hardware Information(H) Multiple Screen Management(A) Point Detect(T) Prestore Picture(R) Color Restore(O) Color Restore(O) Server Status: Receive Card relay(I) MultiBatch of Adgustment(M) 660Configuration(E)       Image: Color Colo	System(S)	Tools(C) Plug-in Tool(P) User(U) Language(Lang)(L) Help(H)
Screen Con Local System Control Sy Monitor Info Monitor Info Multiple Screen Management(A) Point Detect(T) Prestore Picture(R) Color Restore(O) Light Panel Flash(U) Server Status: Receive Card relay(I) Multiple Screen flash Serial Port CoM3 Serial Port Serient By Address Seried By Address Serient Pixel Screen Pixel Operate all pixels!		Screen Config(S)
Collegister       Display Control (P)         Monitor (M)       Function Card (F)         Hardware Information(H)       Multiple Screen Management(A)         Prestore Picture(R)       Color Restore(O)         Color Restore(O)       Light Panel Flash(U)         Server Status:       Receive Card relay(I)         Multiple Screen 1       660 Configuration(E)         Module Flash       X         Serial Port       COM3         Serial Port       Screen 1         Screen 1       Screen 1         Screen 1       Screen 1         Operate all pixels!		Bightness(B)
Control Synchin       Monitor(M)         Function Card(F)         Multiple Screen Management(A)         Point Detect(T)         Prestore Picture(R)         Color Restore(O)         UptPanel Flash(U)         Server Status:         Receive Card relay(I)         Multiple Screen Management(A)         60 Configuration(E)         Module Flash         Serial Port         COM3         Serial Port         Series 1         Screen1	Screen Conf	Calibration(C) trol Monitor Function Card
Control Sv Monitor Info Multiple Screen Management(A) Prestore Picture (R) Color Restore(O) Light Panel FlashU/) Server Status: Receive Card relay(I) Multiple Streen II Monitor (A) 660Configuration (E) Module Flash Serial Port Colvia Seriel Port Sereen Screen I Location: X=0, Y=0 Size: 32W × 16H Screen Pixel Operate all pixels! Operate all pixels!	-Local System	Display Control(P)
Honitor Info       Hardware Information(H)         Multiple Screen Management(A)         Point Detect(T)         Prestore Picture(R)         Color Restore(O)         Uight Phaiel Flash(U)         Server Status:         Receive Card relay(I)         MultiBatch of Adgustment(M)         660Configuration(E)         Module Flash         Serial Port         Coms         Serial Port         Coms         Serient         Screent         Screent         Screent         Screent         Operate all pixels!	Control Su	
Montor into Multiple Screen Management(A) Point Detect(T) Prestore Picture(R) Color Restore(O) Light Panel Flash(U) Receive Card relay(I) MultiBatch of Adgustment(M) 660Configuration(E) Module Flash Serial Port COM3 Serial Port COM3 Serial Port COM3 Screen Screen: Location: X=0, Y=0 Size: 32W× 16H Screen Screen Screen Operate all pixels!	Control Sv	Function Card(F)
Point Detect(T) Prestore Picture(R) Color Restore(O) Light Panel Flash(U) Receive Card relay(I) MultiBath of Adgustment(M) 660Configuration(E) Module Flash Serial Port COM3 Serial Port COM3 Serial Port Screen 1 Screen 1 Screen 1 Screen Pixel Operate all pixels! Operate all pixels!	- Monitor Info-	
Point Detect(1)       Prestore Picture(R)         Color Restore(O)       Light Panel Flash(U)         Receive Card relay(I)       MultiBatch of Adgustment(M)         660Configuration(E)       660Configuration(E)         Module Flash       X         Serial Port       COM3         Send By Address       Send By Topolopy         Select Screen       Screen1         Screen Pixel       Topology Or List         Screen Pixel       Operate all pixels!	田盟	
Color Restore(O) Light Panel Flash(U) Receive Card relay(I) MutiBatch of Adgustment(M) 680Configuration(E)  Module Flash Serial Port: COM3 Seried By Topolopy Select Screen Screen1 Screen1 Screen1 Screen1 Operate all pixels! Operate all pixels!		
Server Status:       Receive Card relay(I) MutilBatch of Adgustment(M) 660Configuration(E)         Module Flash       X         Serial Port:       COM3         Send By Address       Send By Topolopy         Select Screen       Screen:1         Screen       Screen         Screen       Screen         Screen       Screen         Operate all pixels!		
Server Status: Receive Card relay(I) MultiBatch of Adgustment(M) 660Configuration(E)		
MutiBatch of Adgustment(M) 660Configuration(E)  Module Flash Serial Port: COM3 Serial Port: COM3 Select Screen Screen1 Location:X=0, Y=0 Size: 32W×16H Screen Screen Coperate all pixels! Operate all pixels!		
8 Module Flash         Serial Port         COM3         Send By Address         Send By Topolopy         Select Screen         Screen1         Screen1         Screen1         Screen1         Operate all pixels!	Server Status:	
Module Flash         Serial Port         COM3         Send By Address         Send By Address         Send By Topolopy         Select Screen         Screen1         Screen         Pixel         Topology Or List         Select Area On         Operate all pixels!	and	
Serial Port COM3  Serial Port COM3 Serial Port COM3 Serial Port COM3 Serial Port COM3 Serien Pixel Topology Or List Select Area On Screen Operate all pixels! Operate all pixels!	1000	660Configuration(E)
Send By Address Send By Topolopy Select Screen Screen1 Screen1 Screen Pixel Operate all pixels!	Module Flash	
Select Screen Screen:1 Location:X=0, Y=0 Size: 32W×16H Screen Screen Screen Pixel Operate all pixels!		
Screen1 Location: X=0, Y=0 Size: 32W×16H  Screen Screen Screen Screen Operate all pixels!		Send By Topolopy
Screen  Screen  Screen  Screen  Screen  Operate all pixels!	Select Screen	Screen:1 Location:X=0, Y=0 Size:32W×16H
Operate all pixels!	Screen1	
Operate all pixels!		Screen Pixel      Topology Or List      Screen
	7	
	KY	
Check coefficients in Scan, Check coefficients in Modul Save coefficients on Scan Save coefficients to Modules Flash Check		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		
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		
Check coefficients in Scan, Check coefficients in Modul Save coefficients on Scan Save coefficients to Modules Flash Check		
	Check coefficien	ts 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.

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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	1	*	Means all the scan boards of the first port in the first
L			sending board .
1	1	1	Means the first scan board of the first port in the first
	1	1	sending board.

🖳 Module Flash	A ALENA I PLE II ALE						
Serial Port: COM3 -							
Send By Address Send By Topolopy	Send By Address Send By Topolopy						
Sending#	Port	Scan Bo.					
1	1	1					
1	1	2					
1	1	3					
▶ 1	2	*					
*							
Index start from 1,'*' means 'all'(F	lash Check no support '*').						
1.If the position of scan board is:1-*-*,it means	all the scan boards of the first sending board;						
2.If the position of scan board is:1-1-*,it means	s all the scan boards of the first port in the first se	ending board;					
3.If the position of scan board is:1-1-1, it means the first scan board of the first port in the first sending board;							
Check coefficients in Scan Check coefficien	nts in Modul Save coefficients on Scan Sa	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.

🖳 Module Flash	
Serial Port:	COM3 -
Send By Address S	end By Topolopy
- Select Screen	
	Screen:1 Location:X=0, Y=0 Size:32W×16H
Screen1	Screen Pixel      Topology Or List      Select Area On     Screen
	Operate all pixels!
	RTE
Check coefficients	s 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

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



🖳 Nodule	Flash								X
Serial F	Port: COM1	~	]						
	Verify Resul	ŧ						1	×
Send By Ac									7
Select Sc	Sending Board	Port	Scan Board	Flash X	Flash Y	Flash Width	Flash Height	ErrorType	
	1	2	1	0	0	32	32	Hardware Error	
Screer	1	2	1	0	32	32	32	Hardware Error	
Screer									
									•
								OK	
								UK	
									-
<u></u>									,
Check co	efficients in Sc	an Check co	efficients in Mo	dul., Save co	efficients on S	Scan Save	coefficients to	o Modules Flas	h Check

Fig. 6-4 Flash check

## 7 Multi Batch Adjustment

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

In the main interface, click "Tools"  $\rightarrow$  "MultiBatch Adjustment", start multibatch adjustment. The operation steps are as follows:



🚺 NovaLCT-N	lars V4.2.0(No Hardware)	
System(S)	Tools(C) Plug-in Tool(P) User(U)	Language(Lang)(L) Help(H)
Screen Conf	Screen Config(S) Bightness(B) Calibration(C) Display Control(P)	rol Monitor Function Card
Local System Control Sv	Monitor(M) Function Card(F) Hardware Information(H)	0 View Detail
Monitor Info	Multiple Screen Management(A) Point Detect(T) Prestore Picture(R)	
Server Status:	Color Restore(O) Light Panel Flash(U) Receive Card relay(I)	
	MultiBatch of Adgustment(M) 660Configuration(E)	

Fig. 7-1 Multi Batch Adjustment

1) Select a colorimeter connected to the system. If the system does not connect with the

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

Select colorimeter in	iformation	
© Commonly us	Other colorimeter	🔿 No colorimeter
Select colorimeter:	Minolta CS2000	•
Determine precision according to t colorimeter information.	he selection of	Next step

Fig. 7-2 Select colorimeter information

#### 2) Set sample batches

Select screen, and select the corresponding communication port, click "fee" to add a batch, 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.

Set sample ba	tches			-0	
Sample batches	Screen informatio Communication ports:	n [COM3	▼ Select display:	Display1	•
Sample batchesi	Sample regional i X coordinates:		Y coordinates:	0	Choose region
💐 Sample batches2 💐 Sample batches3 💐 Sample batches4	Width: -Colorimeter measu	32 rement value	Height:	16	
	Screen Red Green	Brightne	SS Cx		Cy
	Blue	uce only, not adju	ustable, only select or	ne batch	
	information of the				



) Screen 💿 Pixel	🔘 Topology or List	Select Area On Screen	
	-		
Start Columns	0		
Start Rows of	0		
Width:	32		
Height:	16		

Fig. 7-3 Choose region

1) 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 adjustment	
Bright 🗙 30 %	
Automatic switching Interval 3 📚 Second swit	
Last step	Next step

Fig. 7-4 View the effect of initial adjustment

2) Select the target batch and processing batch; if the step 1) sets a reference model, the target batch could not be modified here.

<b>H</b> ultiple batch control	C			×
Select sample bat	ches			
	Select the targ	Sample batches1	~	
2	Select the proc	Sample batches2	~	
			Last step	Next step

Fig. 7-5 Select the target and pro

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3) 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 adjustment	t of monochrome (1/3)	
Sample batches		
Target	Fine adjustment of red Fine adjustment of green Fine adjustment of blue	
😔 Sample batchesi	Red co <	2047
Processing	Green K	50
Sample batches2		
	Blue c 🔇	17
	R	
	Revocation of.	
	N.	
Reselect t Switch bat	Olk.	
	Next st	tep

Fig. 7-6 Fine adjustment of monochrome



Multiple batch control				
Fine adjustment of monochrome $(1/3)$				
Sample batches         Target         Sample batches1         Processing         Image: Sample batches2         Image: Sample batches3         Image: Sample batches4         Image:				
Next step				

Fig. 7-7 Reselect the target batch



Tultiple batch control					
Fine adjustment of monochrome (1/3)					
Sample batches		🔜 Switch process	ing batch 🛛 🗙		
	Fine ad	Current process	Sample batches2	adjustment of blue	
<b>Target</b>	Red c	Select a new batch	<b>~</b>	2047	
Processing	Green	∠已调节批次		> 50	
1112 ample patchess	Blue			> 17	
				Revocation of	
				.0.1	
Reselect t Switch bat		Confirm	Cancel		
Next step					

Fig. 7-8 Switch processing batch

4) 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	×
Fine adjustme	ent of white (2/3)	
Sample batches		7
Target	Whether the effect of the current batch of white is satisfactory?	
∲Sample batches1	○ Satisfied	
Processing		
Sample batches2	-Fine adjustment of white	ר
	Red co 🔇	
	Green 🖌	
	Blue c <	
	$O^{\circ}$	
	Revocation of	
	Last step Next step	)

Fig. 7-9 Fine adjustment of white

5) 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.



Iultiple batch co	ntrol 🛛			
Automatical optimization and match of effect (3/3)				
-Sample batches	l			
Target Sample batches1 Processing	Whether the current screen effect is satisfactory? (1 / 48)			
🙀 Sample batches2	🗖 Satisfied 📮 Dissatisfied			
	Please carefully check the color on the screen. The system will carry out calculation optimizations based on the results of your selection, so the sequence jumping is a normal phenomenon.			
	<u> </u>			
	Last step Next step			

Fig. 7-10 Automatically optimization and match of effect

6) 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.



Tultiple batch cor	ntrol 🗙
	oletion of adjusting the current batch, view the
Sample batches Target ↔ Sample batches1 Have adjusted ✓ Sample batches1 ✓ Sample batches2	Display effect of all batches View the effect of adjustment Bright Automatic switching Interval 3 Second swit
	Complete al Last step Proceed to
Multiple batch control	
Select sample	e batches
	Select the targ Sample batches1
	Last step

Fig. 7-11 View effect of the current batch and select the next processing batch

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

completion.

Iultiple batch co	ntrol 🗙
After the comp effect.	pletion of adjusting the current batch, view the
Sample batches Target Sample batches1 Have adjusted Sample batches1 Sample batches2	<ul> <li>Display effect of all batches</li> <li>View the effect of adjustment</li> <li>Bright </li> <li>Bright </li> <li>Automatic switching</li> <li>Interval 3 Second swit</li> </ul>
	Complete al Last step Proceed to

Fig. 7-12 Complete all batches

8) 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.



×

	- L-+	_1	1
Tultipl	е рати	cn con	troi

Selection of best solution

	ease 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
xtended operation:	
Red: <	> 0
Green:	> 0
Blue:	> 0
看色度计调节效果 ● ● ● ● ●	0 0
	> 30 %
Bright 🖌 🚺	JU W

Fig. 7-13 Selection of best solution

9) 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.



Multiple batch control	Annual Property county	-	angel.	-		×
Adjust application of effect						
-Sample batches Sample batches1 Sample batches2	Adding region		A	pply all	Rev	oke all
	Serial Regional information	Screen <sub>.</sub>	Applicati	Revocațio	Deletion	
	1 COM3, Display1, X:0, Y:0, W:15	Screen	Apply	Cancel	Delete	
	2 COM3, Display1, X:0, Y:0, W:10	Screen	Apply	Cancel	Delete	
				0	)•'	
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. 7-14 Adjust application of effect

### 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.

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



🖳 Setting of receiving card relay	<b>J</b>
Serial port selection	
Serial port COM7	-
Screen1	
Parameter of receiving card relay	
Oisconnected	
Connected	
Auto	
Temperature under auto mode	
Temperature of connected relay	
Refresh	
Receive Card Timing cleared	
Record Time Unknown	
Refresh Timing cleared	

Fig. 8-1 Setting of receiving card relay

## 9 660 Configuration

The cabinet configuration files are imported to MCTARL660, provided that the MCTARL660 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:

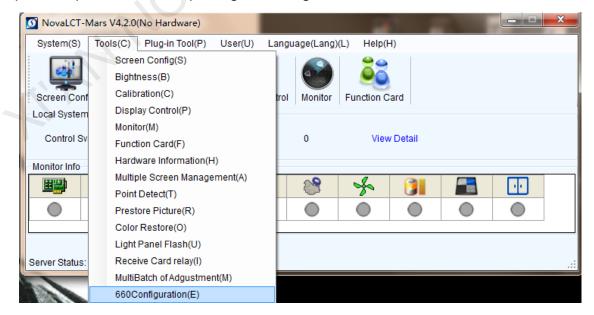


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🖳 Screen Config-COM5	
Sending Board Screen Connection	
Module Info Chip: SUM2017 Size: 32W×32H Direction: Horizontal Decode Type: 74HC138 Decoding Cabinet Info	Scan Type: 1/16 scan Data Group: 2
Module Casc Right to Left Const	?? Heicht ?? Please make sure the width and height v
Performance Setting	
Group Swap       More Setting       ✓       Clear Afterglow         Refresh Rate:       480        Hz       Accelerate R       4         Gray Scale:       Normal 4096        Gray Mode:       Refree         Data Clock:       12.5        MHz       Data Duty:       50         Clock Phase:       2       ✓       Low Gray Co       0         Blanking Time:       25        ✓       (=2.00us)       Ghost Contro       20         Line Change T       3       ★       (0~19)	<ul> <li>▼</li> <li>(25~75) %</li> <li>↓</li> <li>(1~24)</li> </ul>
Brightness Effi 68.24% Min OE: 80 ns	
Smart Setting Load File	Save File Read From HW Send To HW

Fig. 9-1 Save configuration file

The operation procedures of importing the configuration files are as follows:







MCTRL660 Setting	×	
Select COM port: COM5 The serial port that co ss P3-file P6-file	Move Up	
Add File Delete File Rename File MCTRL660 Setting	ii. X	
Select COM port: COM5 👻		$O^{\prime}$
ss2 ss P3-file P6-file	Move Up Move Down	
Add File Delete File		
Rename File Save to HW 🗙		

Fig. 9-2 Import configuration file

## 10 Configure information management

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



System(S)       Tools(C)       Plug-in Tool(P)       User(U)       Language(Lang)(L)       Help(H)         User       Display Control       Monitor       Fu       Configure information management(M)         Screen Config       Brightness       Calibration       Display Control       Monitor       Fu         Local System Info       Control Svstem:       1       Other Device:       0       View Detail         Monitor Info       Image: Control Contro								_
Screen Config Brightness   Calibration Display Control   Monitor Fu   Configure information management(M)   Set initial position(P)   About(A)     Control System:   1   Other Device:   0   View Detail     Monitor Info     Server Status:   Server Status:   Server Version:3.0     ConfigFile Management     Capped     Capped	0 NovaLCT-Mars V4.2.0		-			-		
Screen Config Brightness Calibration Display Control Monitor Fu Configure information management(M)   Local System Info   Control System: 1 Other Device: 0 View Detail   Monitor Info   Image: Config File   Management   Image: Config File	System(S) Tools(C)	Plug-in Tool(P) Us	er(U) Language(Lang	I)(L) Help	H)			
Screen Config Brightness Calibration Display Control Monitor Fu Set initial position(P) Local System Info Control System: 1 Other Device: 0 View Detail Monitor Info Server Status: Server Version:3.0					Jser Docum	ents(D)		•
Local System Info Control System: 1 Other Device: 0 View Detail Monitor Info  Server Status: Server Version:3.0  ConfigFile Management  Toport Co  Export Co  Capcel	🚆 🔛	<b>_</b> ( <b>)</b>			Configure inf	ormation mai	nagement(M)	
Control System: 1 Other Device: 0 View Detail  Monitor Info     Monitor Info     Server Status: Server Version:3.0	Screen Config Brightn	ess Calibration Di	splay Control Monitor	Fu	Set initial pos	ition(P)		
Monitor Info	Local System Info				About(A)			
Import ConfigFile Management       Import ConfigFile Management	Control System:	1 Other	Device: 0	Vie	w Detail			
Server Status: Server Version:3.0	Manifestatio							
Server Status: Server Version:3.0		0.0.2		. 1				
ConfigFile Management	<u>⊞</u> ,			3				
ConfigFile Management								
ConfigFile Management								
ConfigFile Management								
	Server Status: Server Vers	sion:3.0						.::
	r					~	1	
Import Co Export Co Cancel	•	ConfigFile Ma	anagement			×		
Import Co Export Co Cancel								
		Import Co	Export Co		Cancel		0.	

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.

	Note:
	1. There isn't any place to view the typing when typing the passcode. Just type in
d	the passcode directly.
and	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.



Load Program	
Select operation commur	ication port
Current operation communication port:	COM5   COM5 COM5
Select Program	Realtek PCIe GBE Family Controller
Program Name:	Tx600 Data Mars V3.6.0.0
Program Version:	3.6.0.0
Prooram 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	Sendino Board FPGA Scan Board FPGA Change Reconnect
Hardware Version Info Refresh All	rresh One Sending Board 1 Port: 1 Scan Board: 1 Refresh
	resh One Sending Board. V Port. V Scan Board. V V
	resh One Sending Board. V Port. V Scan Board. V V
Refresh All     Ref     V3.6.0.0 Total 1, Rema	resh One Sending Board. V Port. V Scan Board. V V
Refresh All      Ref     V3.6.0.0 Total 1, Rema	rks:2013.09.11T
Refresh All     Ref     V3.6.0.0 Total 1, Rema     Sending Board MCU     Sending Communication Info	rks:2013.09.11T
Refresh All     Ref     V3.6.0.0 Total 1, Rema     Sending Board MCU     Sending     Communication Info     2013/12/16 14:59:12Curr	rks:2013.09.11T

Fig. 11-1 the Load Program page



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d Program			×
Load Program			
Select operation comm	unication port		
Current operation communication port:	Realtek PCIe GBE Family Controller 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\Send	Card\Tx600_Data_Mars_3.6.0.0	
Select Items To Load			
	E	Scan Board FPGA	hange Reconnect
	arks:2013.12.14 for test all 修改热备份 + 改进同步	步机制+修改发送卡有横条问题+加入目	目的mac地址
			0.,
Scan Board FPGA			
Communication Info			
Communication Info	ead FPGA program version of scan board 0 .		
Communication Info 2013/12/16 14:59:30Re 2013/12/16 14:59:31Re	ad FPGA program version of scan board 0 .		
Communication Info 2013/12/16 14:59:30Re 2013/12/16 14:59:31Re		<u>t</u>	Clear

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

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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.

## 12 **Problem and Solution**

# 12.1 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.

# 12.2NovaLCT-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.12-1. If the display has not been configured yet, configure it.



Screen Config-COII9
Sending Board Scan Board Screen Connection Screen N 1  Config
Screen Type: O Simple Screen O Complex Screen
Location: X: 500 Y: 0 Virtual Mo 🗆 Enable
Operate Port       Scan Board       1       Reset All       Hide Line         I       I       Rows:       1       Reset All       Hide Line         I       I       Sending#.1       Port:1       Port:1       Port:1       Port:1       Nort:1       Scan Board Size         Width:       128       Image: Scan Board Size       Image: Scan Board Size
Apply to port
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
Factory Restore         Save Config File         Close

Fig. 12-1 the Screen Configuration page

# 12.3The 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.12-2 is

the Sending Board page.

Sending Board	Scan Board	Screen Connectio	n				
Display Mod Current Dis Sending Resolution	splay Mode – Board	n v anni	Graphics output resolution:	1440 x 900	>	Refresh	
- Set the ser Resolution	-	display mode 0 x 900 px 🛛 🗸	Custom	: 144	x 👻 0	900	
Refresh	Rate: 60	~	Hz			Set	

Fig. 12-2 the Sending Board page

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Check whether the settings in the Smart Setting procedure are correct.

# 12.4**Only** 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.12-3 is the Smart Setting Step 1 page.

Data Type:	Concurrent 🗸
Chip Type:	Common Chip
OE Polarity:	Unknown
Module Info	
Module Type:	Regular Module
Chip Count of each	co 1
Actual Pixel:	x: 32 文 y: 32 🗘
Data Group:	Unknown
Decoding Type:	74HC138 Decoding
Scan Type:	🖸 Over 16 Scans 1/16 scan 👻
Module in one scar	Cols: 2 Cols: 2
Module Cascade Typ	e(From The Front)
<ul> <li>Left To Right</li> </ul>	Right To     Up To     Down     To Up
Scan Board Work Mo	de
Hub Mode:	● Normal   ○ 20 Groups   ○ 24 Groups   ○ 28 Groups
Ghost Control Sig	gnal Polarity: 💿 High 🔘 Low

Fig. 12-3 the page of Smart Setting Step 1

## 13 Appendix

### 13.1 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.	$\cdot$
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	
T.	ANNO		