Version: V 4.5.2

Nova Pluto Control System User Manual

Xi'an NovaStar Tech Co., Ltd.

Statement

Dear users:

Welcome to use Pluto control system. We are pleased to offer this manual to help you understand and use the product. In the preparation of the manual, we try to make it accurate and reliable. Nova may revise and alter the contents of the manual at any time without notice. If you have any problems in the use, or you have any suggestions, please inform us in accordance with the contact provided in this manual. For the problems you encounter in the use, we will do our best to provide support. For your suggestions, we would like to express our thanks and make assessment as soon as possible for adoption.

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Definition of document mark

⚠	**ATTENTION: Identifies information that requires special consideration.**
☞	**TIP: Identifies advice or hints for the user.**

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1 System overview

NovaPluto is a set of LED display centralized playback control program that can remotely release play programs, monitor playback and screen body state, and remote control. This program has flexible network structure, so that it can be easily deployed in the local area network and wide area network, supports the server-free, single-server, and multi-server architectures, and suits different scale projects under different situations. The NovaCloud software is required when a server is available. For details, see related materials about NovaCloud.

NovaPluto program mainly includes three parts which are the display configuration software NovaLCT-Pluto, centralized playback control software （PlutoManager）, and asynchronous controller PBOX100.

PluotManager is a play and management software for Pluto asynchronous control system, it can connect to the asynchronous control card via LAN or internet. The main functions include client management, Play-Program editing, Play-Program transmission, play status remote monitoring etc.

NovaLCT-Pluto software, referred to as LCT hereinafter, mainly controls the LED display’s smart setting, performance parameter setting, brightness adjustment and calibration, to achieve the best performance of it.

1.1 Configuration List

Description	Model/Version	Function
A Controller	PBOX100	Core control card
Configuration software NovaLCT-Pluto		Parameters configuration, display calibration, and hardware monitoring
PlutoManager		Program publishing and play status monitoring
Accessories		Accessories

1.2 System Structure

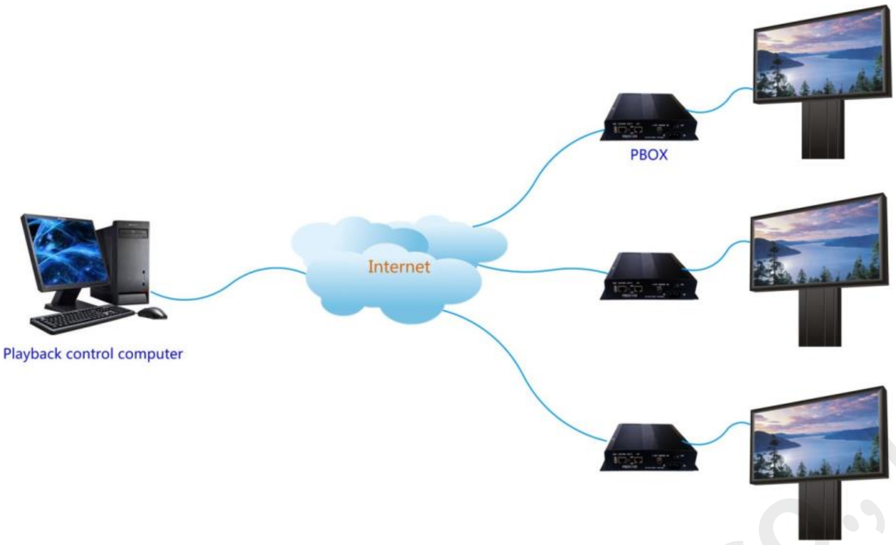


Fig. 1-1 Architecture of server-free system

2 System Requirements

In order to ensure the stability and security of the system operation, following requirements are recommended:

The computer of MC-go mainly runs management software, to achieve play program production, remote release, remote monitoring and other functions.

Requirements for computer hardware configuration:

- CPU： Dual-core, over 2.4GHz;
- Hard disk drive：SCSI interface，with over 500GB capacity;
- Video card：Independent video card, 3D hardware acceleration, over 1G video memory.

MC-go computer software：

- Operation system environment：windows XP SP3,Windows7 32 bit;
- Installation component：Microsoft .NET Framework;
- MC-go software NovaPluto.

3 Hardware Introduction and Connection

1) PBOX100 control card interface

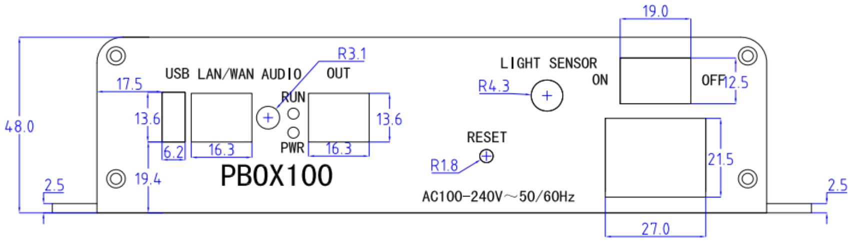

19.0
USB
LAN/WAN
AUDIO
R3.1
OUT
LIGHT SENSOR
ON
OFF
12.5
17.5
R4.3
RUN
48.0
13.6
13.6
PWR
6.2
16.3
16.3
RESET
R1.8
21.5
2.5
19.4
PBOX100
AC100-240V～50/60Hz
2.5
27.0

Fig. 3-1 PBOX100 interface diagram

【LIGHT SENSOR】: Light sensor interface for LED display brightness adjustment according to environment;

【USB】: Connect to common USB disks available in the market;

【SD】: Insert SD card;

【Audio】: Audio input interface;

【LAN/WAN】: Megabyte Ethernet port, Connect to internet;

【 OUT 】: Gigabyte Ethernet port , Cascading to M3 receiving card (scan board) (MRV/200/MRV210/MAR220/MRV300/MRV320/MRV330/MRV340/MRV350/MRV360/ MRV365), or multi-function card (MFN300) ;

2) PBOX100 control card dimensions

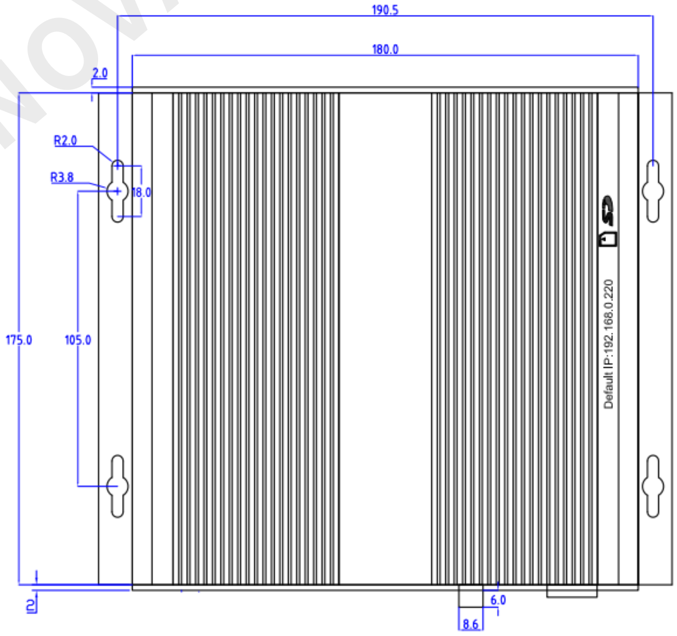

190.5
180.0
2.0
R2.0
R3.8
8.0
175.0
105.0
SD
Default IP:192.168.0.220
2
6.0
8.6

Fig. 3-2 PBOX100 dimensions

4 Software Installation

Installation of NovaLCT-Pluto、PlutoManager is the same to other common software applications. Operate according to the installation wizard.

✋	**If notification of anti-virus software or firewall pops up, please allow it, because the installation process may require to install serial port driver.**

5 Network deployment

This section introduces several common network set-up solutions, so that users can deployment their network according to their specific requirement and the local network environment. In order to ensure regular running of the system, the operator is recommended to obtain some network knowledge before use.

5.1 Requirements

5.1.1 Hardware Connection

The Pluto system default IP is "192.168.0.220", before the network connection, set the network parameters of each a synchronism card on the software NovaLCT-Pluto, it is recommended to adopt the direct network cable connection to connect local computer and clients.

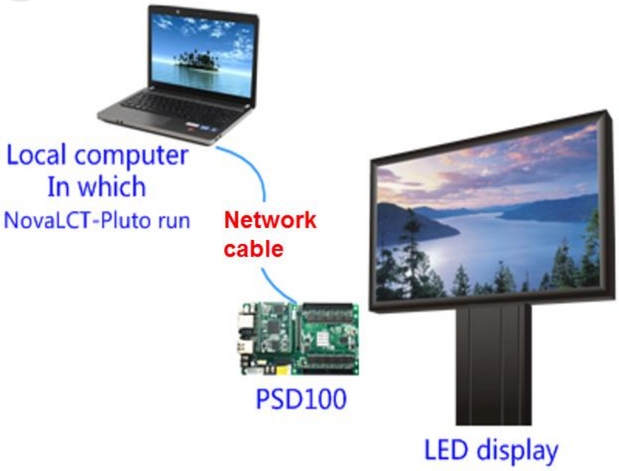


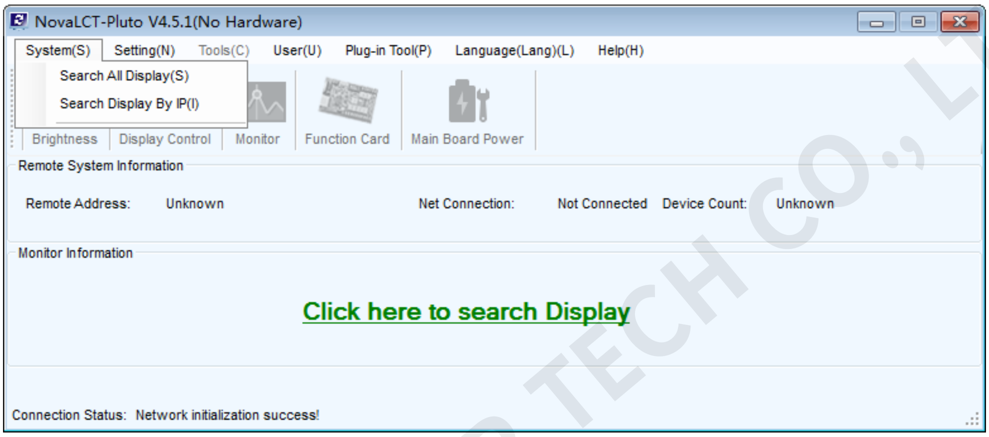
Fig. 5-1 Hardware Connection of NovaLCT-Pluto Configuration Display

	Attention: The local computer shall be directly connected to the 100Mpbs network port.

5.1.2 Setting System IP

Run Nova LCT-Pluto on the local computer ;

1) Click on **System(S)→ Search All Display(S)**, LCT will search the Current Connected Pluto systems.


NovaLCT-Pluto V4.5.1(No Hardware)
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Search All Display(S)
Search Display By IP(I)
Brightness
Display Control
Monitor
Function Card
Main Board Power

Remote System Information

Remote Address: Unknown

Net Connection: Not Connected

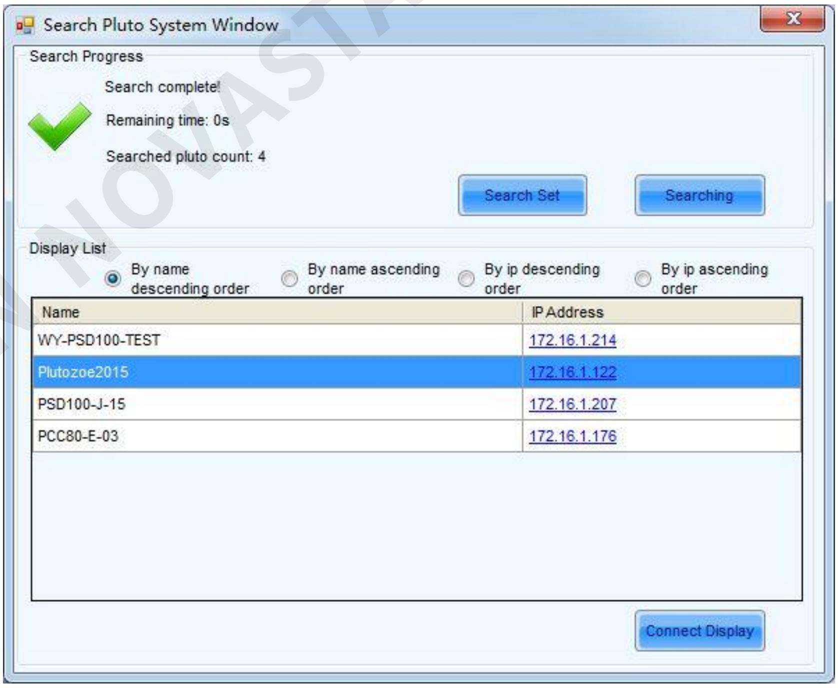
Device Count: Unknown

Monitor Information

Click here to search Display

Connection Status: Network initialization success!

Fig. 5-2 The LCT main interface


Search Pluto System Window
Search Set
Searching
Connect Display

Search Progress

Search complete!

Remaining time: 0s

Searched pluto count: 4

Display List

● By name descending order ○ By name ascending order ○ By ip descending order ○ By ip ascending order

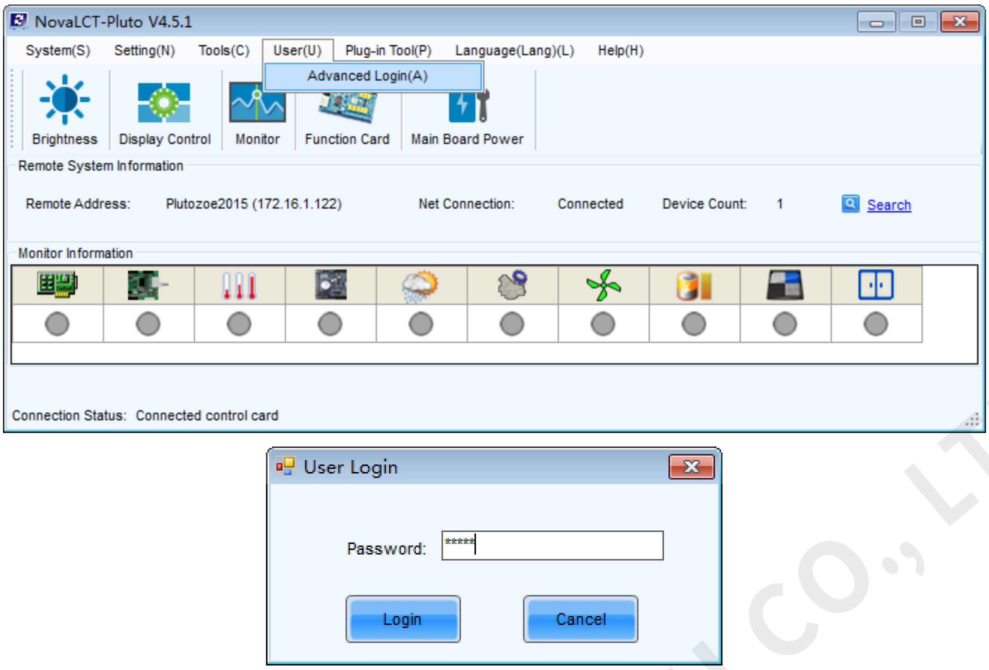
Name	IP Address
WY-PSD100-TEST	172.16.1.214
Plutozoe2015	172.16.1.122
PSD100-J-15	172.16.1.207
PCC80-E-03	172.16.1.176

Fig. 5-3 Search Pluto System Window

Select the client, then click "Connect Display" ;

2) Click **User(U)→Advanced login(A)** , to pop up the user login interface, and then enter the

password “admin”, click【Login】, to enter advanced user interface.

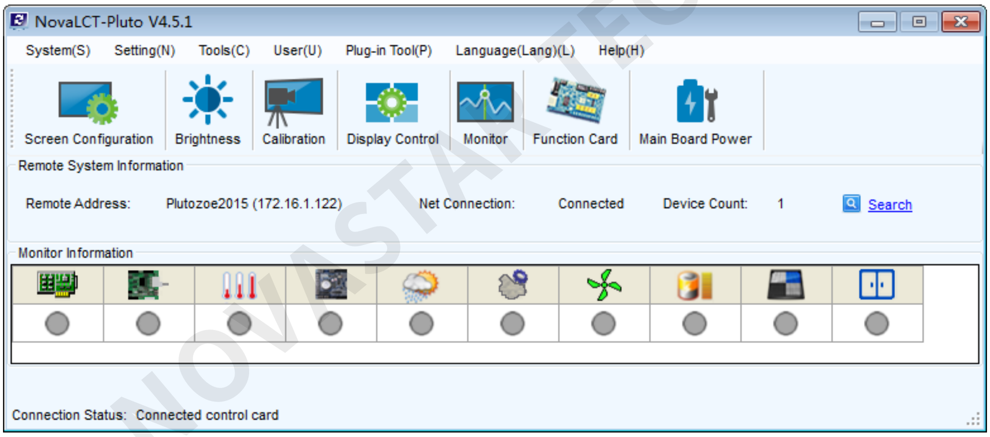

NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Advanced Login(A)
Brightness
Display Control
Monitor
Function Card
Main Board Power
Remote System Information
Search
Monitor Information
User Login
Login
Cancel

Remote Address: Plutozoe2015 (172.16.1.122) Net Connection: Connected Device Count: 1

Connection Status: Connected control card

Password: *****

Fig. 5-4 Advanced login

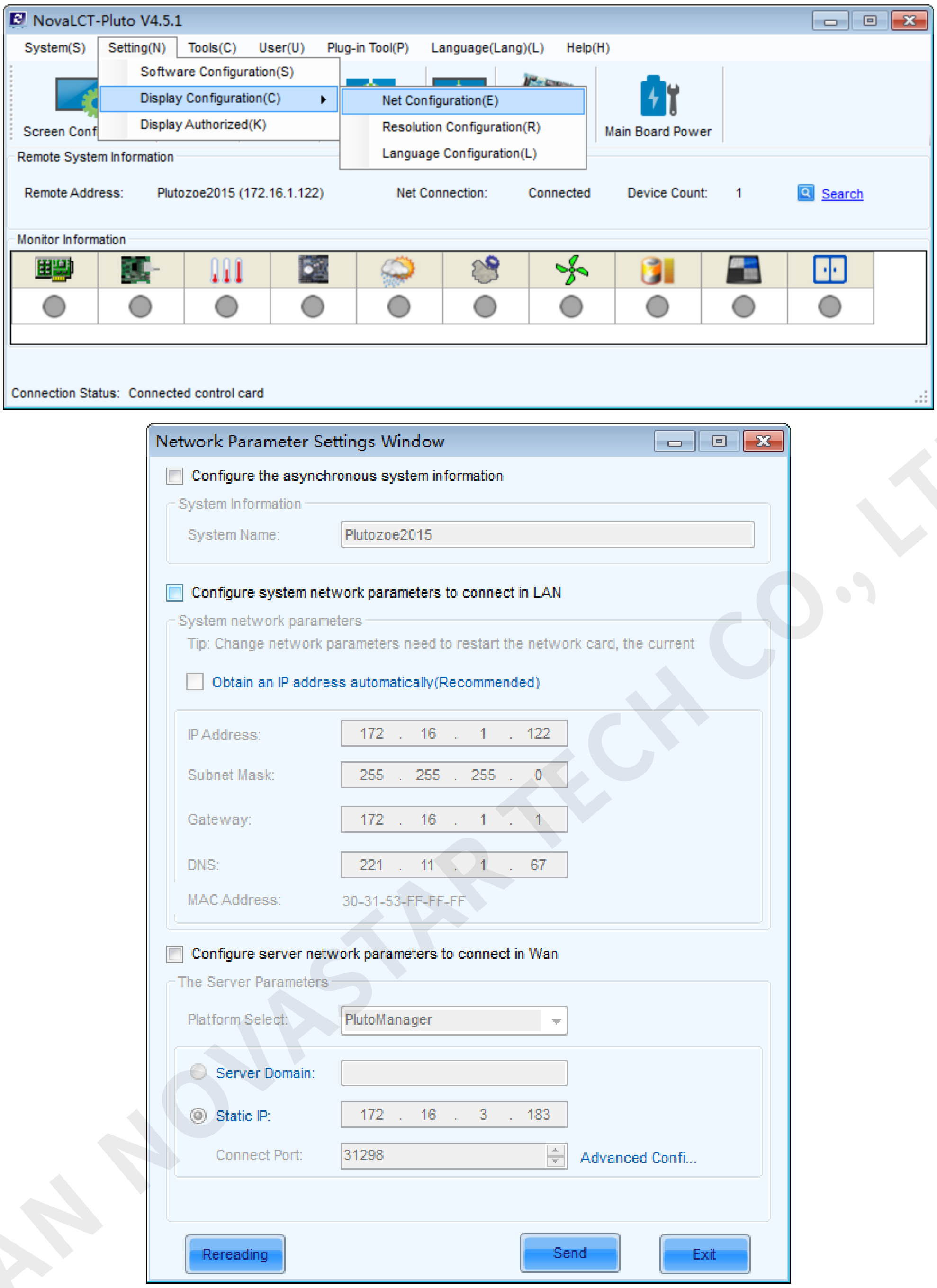

NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Screen Configuration
Brightness
Calibration
Display Control
Monitor
Function Card
Main Board Power
Remote System Information
Search
Monitor Information

Remote Address: Plutozoe2015 (172.16.1.122) Net Connection: Connected Device Count: 1

Connection Status: Connected control card

Fig. 5-5 Advanced interface

3) Click **Setting(N)→Display Configuration(C)→Net Configuration(E)**, to enter the interface as follows:


NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Configuration(S)
Display Configuration(C)
Display Authorized(K)
Net Configuration(E)
Resolution Configuration(R)
Language Configuration(L)
Screen Conf
Main Board Power
Search
Monitor Information
Network Parameter Settings Window
Rereading
Send
Exit
Advanced Confi...

Remote System Information

Remote Address: Plutozoe2015 (172.16.1.122)
Net Connection: Connected
Device Count: 1

Connection Status: Connected control card

☐ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☐ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☐ Obtain an IP address automatically(Recommended)

IP Address: 172 . 16 . 1 . 122
Subnet Mask: 255 . 255 . 255 . 0
Gateway: 172 . 16 . 1 . 1
DNS: 221 . 11 . 1 . 67
MAC Address: 30-31-53-FF-FF-FF

☐ Configure server network parameters to connect in Wan

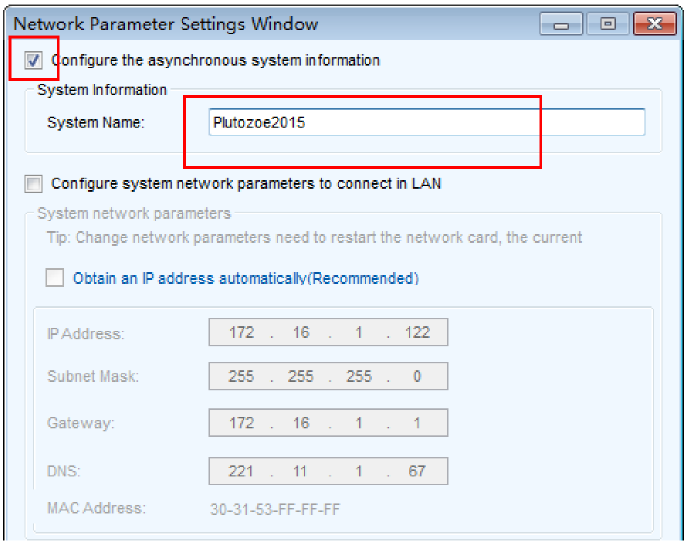
The Server Parameters

Platform Select: PlutoManager

○ Server Domain:
● Static IP: 172 . 16 . 3 . 183
Connect Port: 31298

Fig. 5-6 Network parameter settings

4) Tick **Configure the asynchronous system information**, so that the user can modify the system name, and an easily recognizable system name will bring convenience to your later operation;



Network Parameter Settings Window

☑ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☐ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☐ Obtain an IP address automatically(Recommended)

IP Address: 172 . 16 . 1 . 122

Subnet Mask: 255 . 255 . 255 . 0

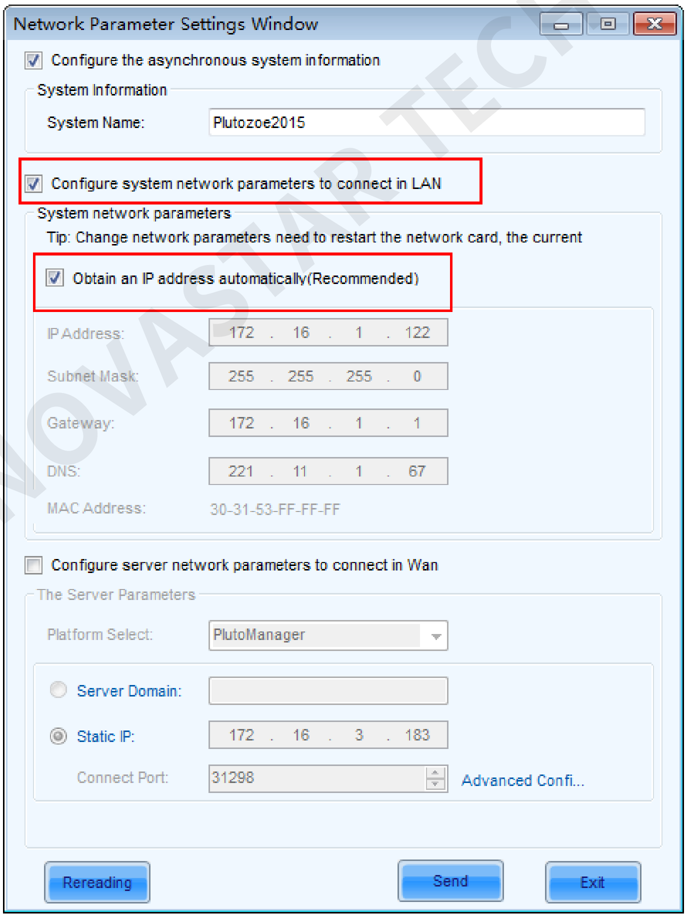
Gateway: 172 . 16 . 1 . 1

DNS: 221 . 11 . 1 . 67

MAC Address: 30-31-53-FF-FF-FF

Fig. 5-7 Setting System information

5) Tick the option **Configure system network parameters to connect in the LAN** and **Obtain an IP address automatically**, and then click **send.**



Network Parameter Settings Window

☑ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☑ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☑ Obtain an IP address automatically(Recommended)

IP Address: 172 . 16 . 1 . 122

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 172 . 16 . 1 . 1

DNS: 221 . 11 . 1 . 67

MAC Address: 30-31-53-FF-FF-FF

☐ Configure server network parameters to connect in Wan

The Server Parameters

Platform Select: PlutoManager

○ Server Domain:

● Static IP: 172 . 16 . 3 . 183

Connect Port: 31298

Fig. 5-8 Configure system network parameters to connect in LAN

Respectively set the network parameters of each asynchronous card according to the above mentioned steps.

5.2 Network Deployment Solution

5.2.1 LAN Configuration Solution

All LED displays and the control computer need to locate in the same LAN;

Requirements:

Hardware:

- Nova asynchronous control card: PSD100
- Switch

Software:

- NovaLCT-Pluto
- PlutoManager

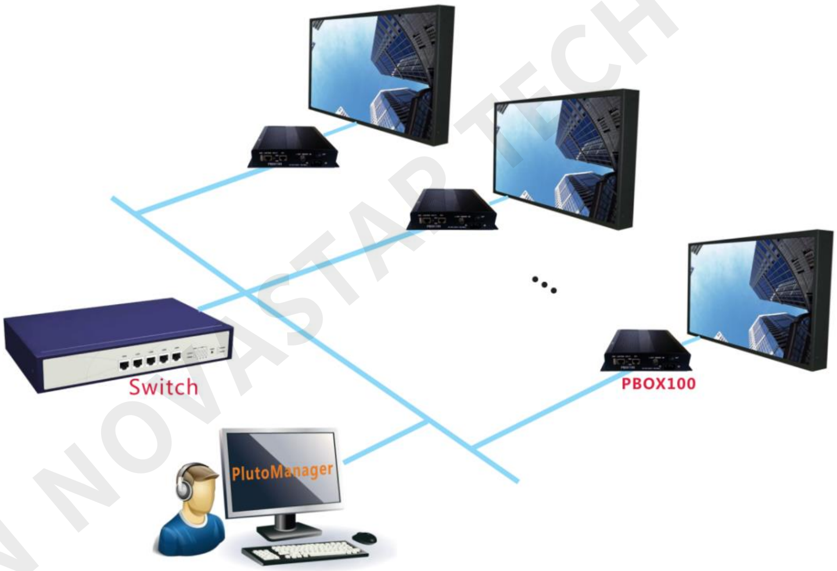
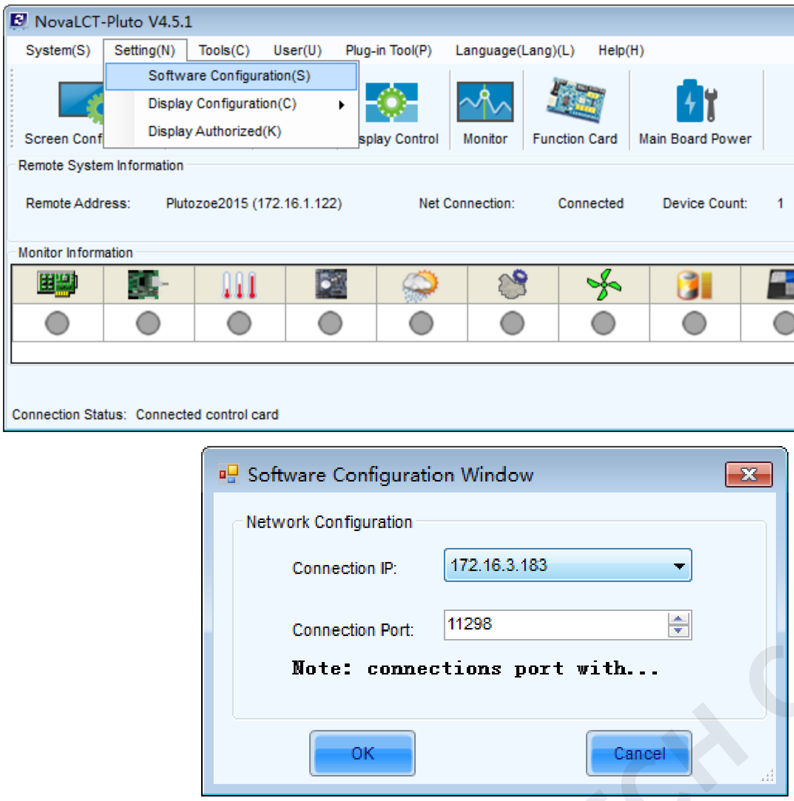


Fig. 5-9 All LED displays and control computers locate in the same LAN

5.2.1.1 Display Setting

1) Run Nova LCT-Pluto on the local computer , click **Setting(N)** → **Software Configuration(S)** to enter the interface as shown below. The connected IP is the IP corresponding to the current computer network card; the connection port can use the default values, and it is not allowed to be same as other software port.

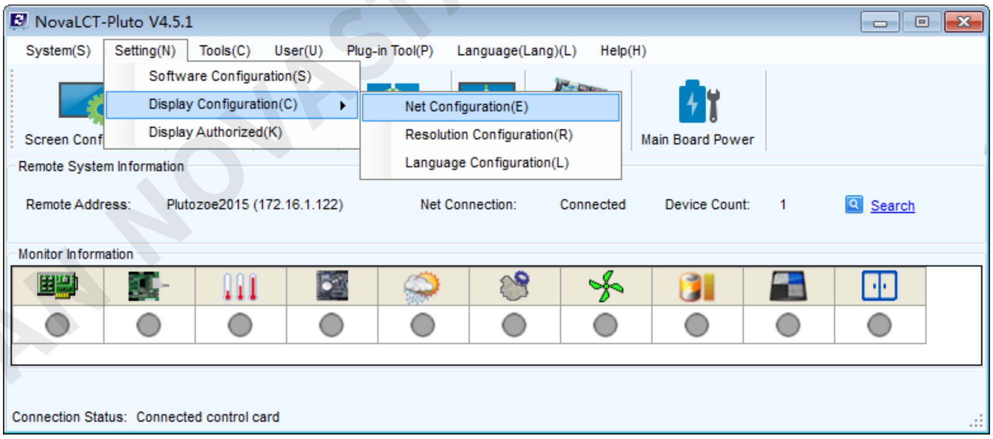

NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Configuration(S)
Display Configuration(C)
Display Authorized(K)
Screen Conf
splay Control
Monitor
Function Card
Main Board Power
Remote System Information
Search
Monitor Information
Software Configuration Window
Network Configuration
OK
Cancel

Remote Address: Plutozoe2015 (172.16.1.122)
Net Connection: Connected
Device Count: 1
Connection Status: Connected control card

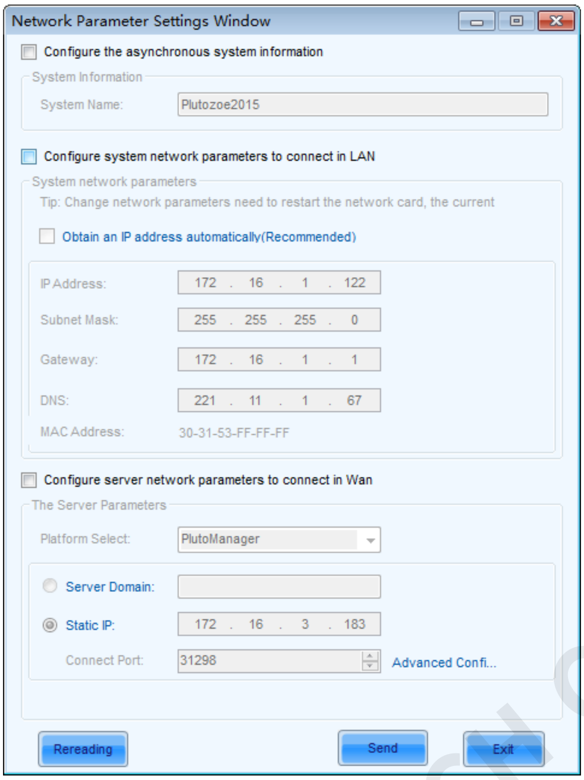
Connection IP: 172.16.3.183
Connection Port: 11298
Note: connections port with...

Fig. 5-10 LCT software configuration

2) Click on **Setting(N)→Display Configuration(C)→Net Configuration(E)** ,to enter the interface as follows：


NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Configuration(S)
Display Configuration(C)
Display Authorized(K)
Net Configuration(E)
Resolution Configuration(R)
Language Configuration(L)
Screen Conf
Main Board Power
Remote System Information
Search
Monitor Information

Remote Address: Plutozoe2015 (172.16.1.122)
Net Connection: Connected
Device Count: 1
Connection Status: Connected control card



☐ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☐ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☐ Obtain an IP address automatically(Recommended)

IP Address: 172 . 16 . 1 . 122

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 172 . 16 . 1 . 1

DNS: 221 . 11 . 1 . 67

MAC Address: 30-31-53-FF-FF-FF

☐ Configure server network parameters to connect in Wan

The Server Parameters

Platform Select: PlutoManager

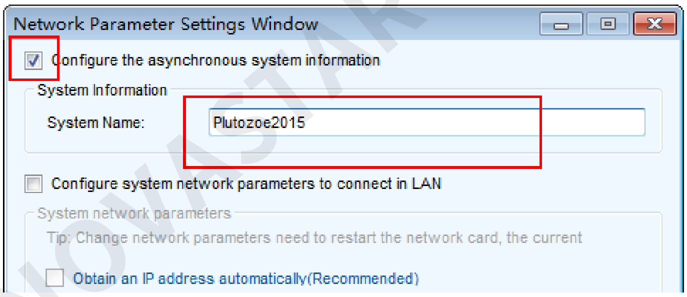
○ Server Domain:

● Static IP: 172 . 16 . 3 . 183

Connect Port: 31298

Fig. 5-11 setting network parameter

3) Tick **Configure the asynchronous system information**，user can modify the system name.



☑ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☐ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☐ Obtain an IP address automatically(Recommended)

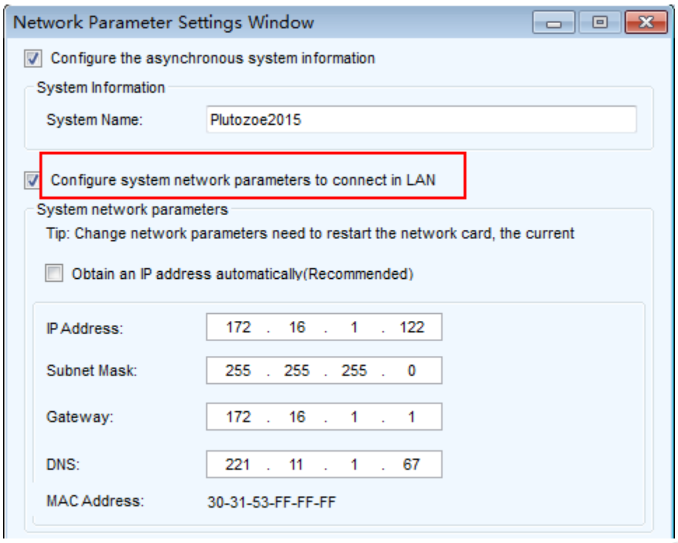
Fig. 5-12 Setting system name

4) LAN parameter configuration

Previously while deploying preparation work on the network, **Obtain an IP address automatically(Recommended)** has been selected，and the advantages of this method are：Only one time of setting for the first use is required, and later, there is no need to set up, and during the use, IP conflict inside LAN shall not occur to ensure the normal work of system.

If the user requires respectively setting IP of each client, he may set IP manually and cancel the ticked **Obtain an IP address automatically (Recommended)**

After the manual setting of LAN parameters as shown in the following image (Note: IP shall not conflict with other devices in LAN), click **send**, to send the network parameters to the asynchronous system.



Network Parameter Settings Window

☑ Configure the asynchronous system information

System Information

System Name: Plutozoe2015

☑ Configure system network parameters to connect in LAN

System network parameters

Tip: Change network parameters need to restart the network card, the current

☐ Obtain an IP address automatically(Recommended)

IP Address: 172 . 16 . 1 . 122

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 172 . 16 . 1 . 1

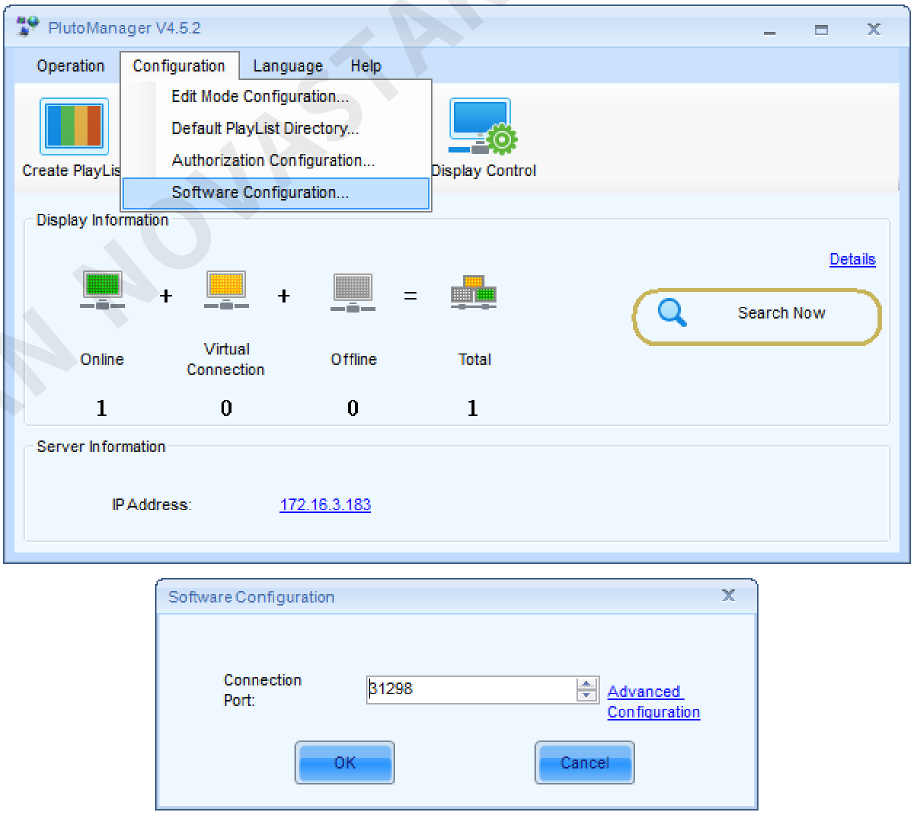
DNS: 221 . 11 . 1 . 67

MAC Address: 30-31-53-FF-FF-FF

Fig. 5-13 LAN parameter configuration

5.2.1.2 Playback Control Software（PlutoManager）Setting

Run Pluto Manager on the playback control computer and click **Configuration** → **Software Configuration** on the main interface as shown below


PlutoManager V4.5.2
Operation
Configuration
Language
Help
Edit Mode Configuration...
Default PlayList Directory...
Authorization Configuration...
Software Configuration...
Create PlayLis
Display Control
Display Information
Details
Search Now
Online
Virtual Connection
Offline
Total
Server Information
Software Configuration
Advanced Configuration
OK
Cancel

Online 1 + Virtual Connection 0 + Offline 0 = Total 1

IP Address: 172.16.3.183

Connection Port: 31298

Fig. 5-14 Server setting

Connection Port: It is allowed to use the default value, and make sure this port shall not be occupied by other software.

In the main interface of PlutoManager, click on the **Search Now →Add Display in LAN**, to search all displays in LAN, specified IP displays or partial LAN displays, and add the searched displays to the specified groups.

For detailed steps of searching clients and grouping clients, please refer to the later chapter about PlutoManager.

After adding, in the main interface of Pluto Manager and display management interface, the added displays can be seen.

5.2.2 Small WAN Solution (Server-Free)

The communication principle is, LED control card connects to PlutoManager control platform running in playback control computers actively by domain parameters, to establish communication links;

At present, the common ways to access the network include: network cable access to a WAN, 3G, Wifi. The following text shall introduce the configuration of WAN to users in details.

Hardware:

- Nova asynchronous control card: PSD100
- ADSL router

Software:

- NovaLCT-Pluto
- PlutoManager
- Static IP or Dynamic domain

5.2.2.1 Hardware/Network Architecture

Internet remote control network structure is shown as below:

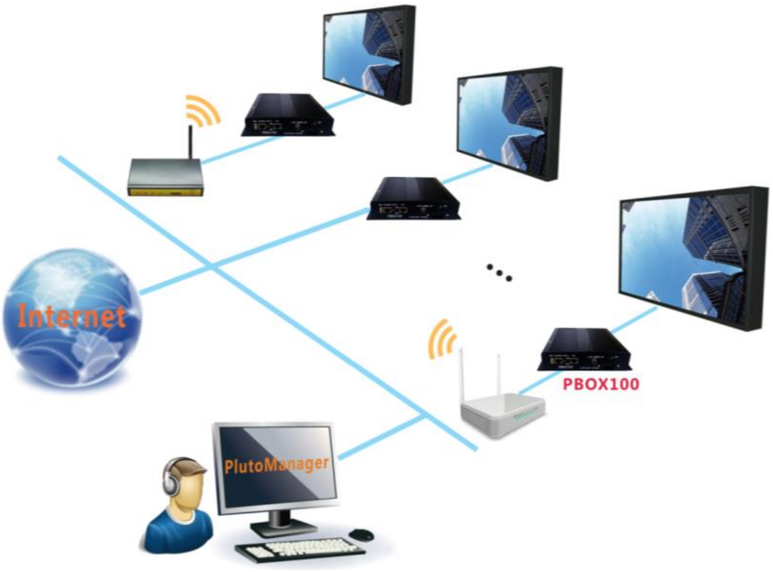


Fig. 5-15 Internet remote control network structure

5.2.2.2 Preparation Work

If there is not static fixed IP address, please firstly apply domain name；and then configure virtual server.

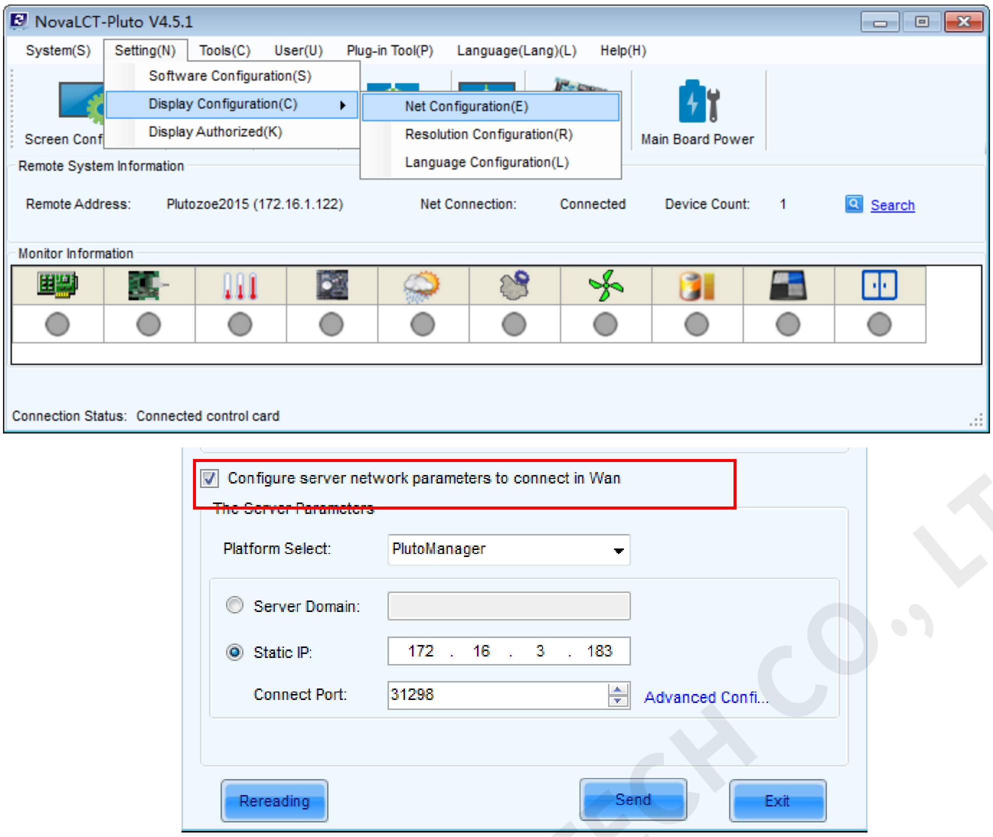
For specific operating method, please refer to “Dynamic Domain Name Configuration Manual”

5.2.2.3 Display Setting

The following text shall take the display screen ① as an example to explain the configuration operation steps, and the configuration steps of other display screens are similar.

Run NovaLCT-Pluto on the local computer, and use network cables to directly connect the local computer and a synchronism card or connect them into one LAN.

1) In the main interface of NovaLCT-Pluto, click on the **Setting(N)→Display Configuration(C)→Net Configuration(E)**, to enter the network parameter setting window, and then tick **Configure server network parameters to connect in Wan**.


NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Configuration(S)
Display Configuration(C)
Display Authorized(K)
Net Configuration(E)
Resolution Configuration(R)
Language Configuration(L)
Screen Conf
Main Board Power
Remote System Information
Search
Monitor Information
Rereading
Send
Exit
Advanced Confi...

Remote Address: Plutozoe2015 (172.16.1.122) Net Connection: Connected Device Count: 1

Connection Status: Connected control card

☑ Configure server network parameters to connect in Wan

The Server Parameters

Platform Select: PlutoManager

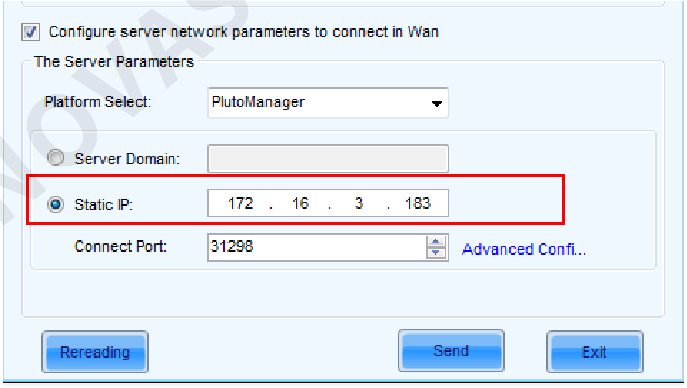
○ Server Domain:

● Static IP: 172 . 16 . 3 . 183

Connect Port: 31298

Fig. 5-16 Configure server network parameters to connect to Wan

2) If the WAN where Control Computer A locates has a static and fixed IP, please tick the option 【server static IP]】to directly fill in the static IP address owned by you;


Rereading
Send
Exit
Advanced Confi...

☑ Configure server network parameters to connect in Wan

The Server Parameters

Platform Select: PlutoManager

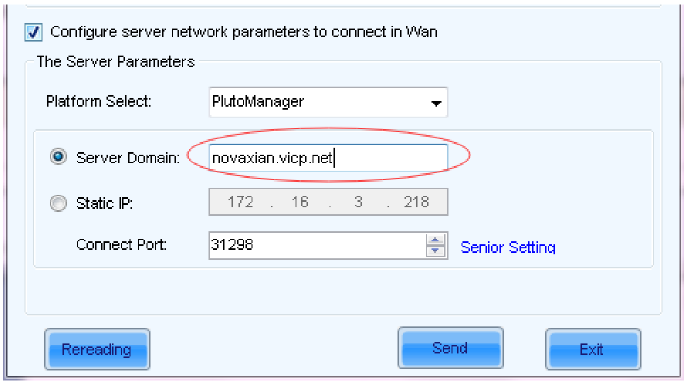
○ Server Domain:

● Static IP: 172 . 16 . 3 . 183

Connect Port: 31298

Fig. 5-17 Set server static IP

3) If there is not static fixed IP address, Check **Server Domain**, input the domain obtained in **5.2.2.2 Preparation Work** ;


Senior Setting
Rereading
Send
Exit

☑ Configure server network parameters to connect in Wan

The Server Parameters

Platform Select: PlutoManager

● Server Domain: novaxian.vicp.net

○ Static IP: 172 . 16 . 3 . 218

Connect Port: 31298

Fig. 5-18 Internet parameters settings

4) Set connection port

Adopt the default value, and make sure it is different from other software ports

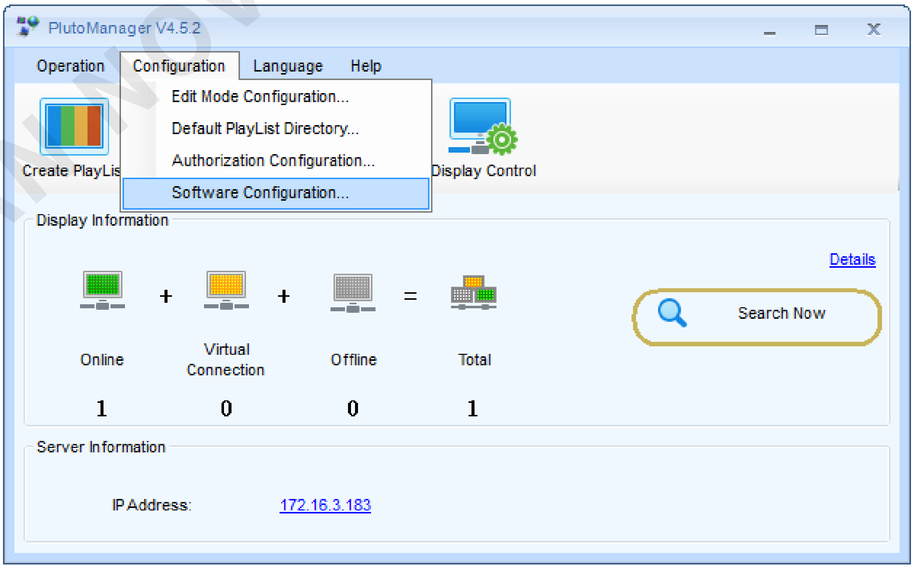
Attention :

The connection port set here must be the same as the connection port set by playback control software.

5) After completion of network parameter settings, click **Send** to send the network parameters to the Asynchronous Card.

5.2.2.4 Playback Control Software（PlutoManager）Setting

1) Run PlutoManagerin Control Computer A. Click **Configuration→Software Configuration** in main interface, as shown below:

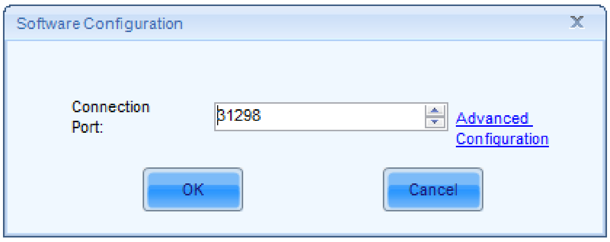

PlutoManager V4.5.2
Operation
Configuration
Language
Help
Edit Mode Configuration...
Default PlayList Directory...
Authorization Configuration...
Software Configuration...
Create PlayLis
Display Control
Details
Search Now

Display Information

Online 1 + Virtual Connection 0 + Offline 0 = Total 1

Server Information

IP Address: 172.16.3.183


Software Configuration
Advanced Configuration
OK
Cancel

Connection Port: 31298

Fig. 5-19 Software settings

Connection Ports: It is allowed to use the default value, and make sure this port shall not be occupied by other software.

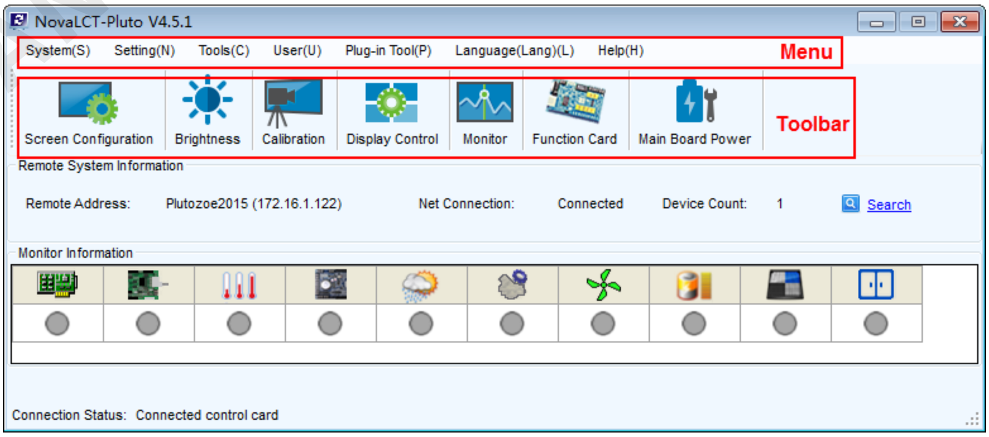
⚠	Connecting port here, and Cmd port in **5.2.2.3 Display Setting** must be the same.

2) After completion of the above setting, in the main interface of Pluto Manager and display management interface, the automatically connected display ① (asynchronous system ①) can be seen.

6 Introduction to NovaLCT-Pluto

NovaLCT-Pluto software integrates functions of LED display configuration, brightness adjustment, comprehensive working status monitoring, LED lights open/short circuit status checking and etc. NovaLCT-Pluto also plays an important role in the pixel level LED display brightness/chromaticity calibration by working with NovaCLB to fulfill the operation. With cabinet database and configuration files in use, it simplifies user’ s operation.

6.1 NovaLCT-Pluto Main Interface


NovaLCT-Pluto V4.5.1
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Menu
Screen Configuration
Brightness
Calibration
Display Control
Monitor
Function Card
Main Board Power
Toolbar
Remote System Information
Search
Monitor Information

Remote Address: Plutozoe2015 (172.16.1.122)
Net Connection: Connected
Device Count: 1

Connection Status: Connected control card

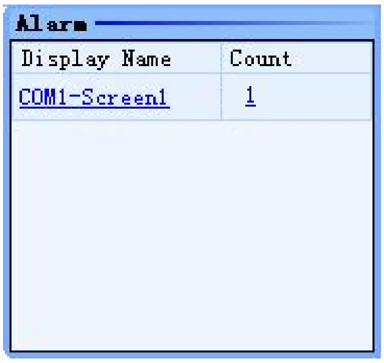
Fig. 6-1 NovaLCT-Pluto main interface

Title: Shows software name and version info;

Menu/Toolbar: See the next section for detailed description;

Remote System information: Shows related information of the currently connected clients;

Monitor information: Shows the overall monitoring results. Red point indicates error detected, and green indicates no error. Click on the red point to access the alarm window which contains corresponding error info. shown as below:



Display Name	Count
COM1-Screen1	1

Fig. 6-2 Alarm window containing error info.

6.2 Menu/Toolbar

Menu/Toolbar			Function
System	Search All Displays		Search Pluto system through the network
	Search Display by IP		Search specific display by IP address
Settings	Software Configuration		Set connection IP (current computer IP) Set connection port (avoid port conflict with other applications)
	Display Configuration	Net Configuration	View current IP of Pluto system, and configure network parameters of it
		Resolution Configuration	Readback、Configure current Resolution
		Language Configuration	Readback、Configure current language
	Display Authorized		Encrypt the client, and generate the authorized file
Tools	Screen Configuration	Screen Configuration	Configure the display. (Accessible to advanced users only)
	Brightness	Brightness	Adjust the brightness of LED display. Three modes available: manually, scheduled and automatically.
	Cabinet Database Management		Manage existing cabinet database or create a new one. (Accessible to advanced users only)

	Calibration	Calibration	Connect to NovaCLB software for display calibration, including calibration coefficients uploading and adjustment. (Accessible to advanced users only)
	Display Control	Display Control	Show blank, lock an image, and continue the playing
	Monitor	Monitor	Enter the monitoring page to access monitor settings and results
	Function Card	Function Card	Enter the function card page to configure
	Hardware Information		View hardware info of currently connected control system
	Point Detect		Enter point detect page to check LED open/short circuit status. (working only after LED display configuration)
	Color Restore		Adjust color gamut
	Main Board Power	Main Board Power	Clocked, immediate off/on of terminal power
Plug-in Tool	Test tool		Open Nova display test tools which contains all the contents of LED display test
	Calculator		A shortcut to the calculator application of Windows
User	Advanced User Login		Password: admin
Language	Chinese (P.R.C)		Switch to Chinese (language of the People's Republic of China)
	Japanese (ja-jp)		Switch to Japanese
	Chinese (zh-CHT)		Switch to Chinese (zh-CHT)
	Francais(fr)		Switch to francais
	English (En)		Switch to English
Help	User Documents		User manual
	About		View the version of software, company name and other info
	Check for Updates		Check for updates

Table. 6-1 Menu/Toolbar introduction

7 NovaLCT-Pluto operation instruction

7.1 Start the LED Display

7.1.1 Start with System Configuration File

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

Requirement: Configuration file of same type LED display exists.

Operating steps:

1) Click **Screen Configuration** button to open the window shown as below:

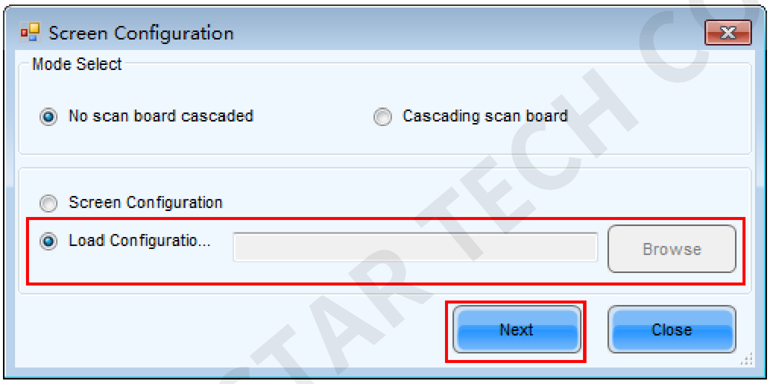

Screen Configuration
Mode Select
● No scan board cascaded
○ Cascading scan board
○ Screen Configuration
● Load Configuratio...
Browse
Next
Close

Fig. 7-1 Select Screen configuration Mode

Attention：

If the connected card is X65 multi-media player，the above interface will not appear. It will go to the **Send Card** page directly.

2) Click **Load Configuration File**, Click **Browse** to load the configuration file.

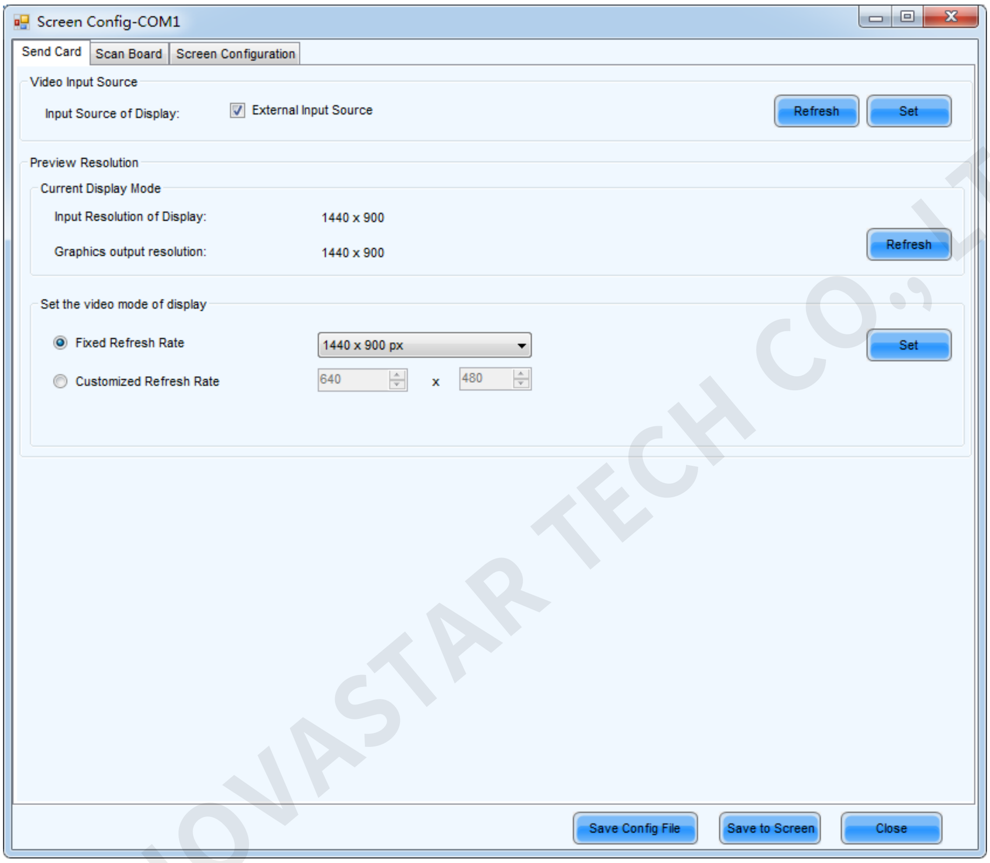
3) Click **Next**, and wait for the load finished.

The loaded performance parameters from the configuration file can be adjusted if they are not suitable. Please refer to **7.1.4 Adjust the Performance Parameters** for details about how to adjust the performance parameters.

7.1.2 Start Manually

7.1.2.1 Input Source Configuration (Only for X65)

Select " **Screen Configuration**" in the Main interface to enter the interface as below. Then you can config the resolution in synchronization mode of X65.


Screen Config-COM1
Send Card
Scan Board
Screen Configuration
Video Input Source
Refresh
Set
Preview Resolution
Current Display Mode
Refresh
Set the video mode of display
Set
Save Config File
Save to Screen
Close

Input Source of Display: ☑ External Input Source

Input Resolution of Display: 1440 x 900

Graphics output resolution: 1440 x 900

● Fixed Refresh Rate 1440 x 900 px

○ Customized Refresh Rate 640 x 480

Fig. 7-2 Screen Config

External Input Source: The video source is an HDMI input source. Get the pictures from PC and Synchronous display.

Set the video mode of display:

Fixed Resolution: Users can choose one of the fixed values.

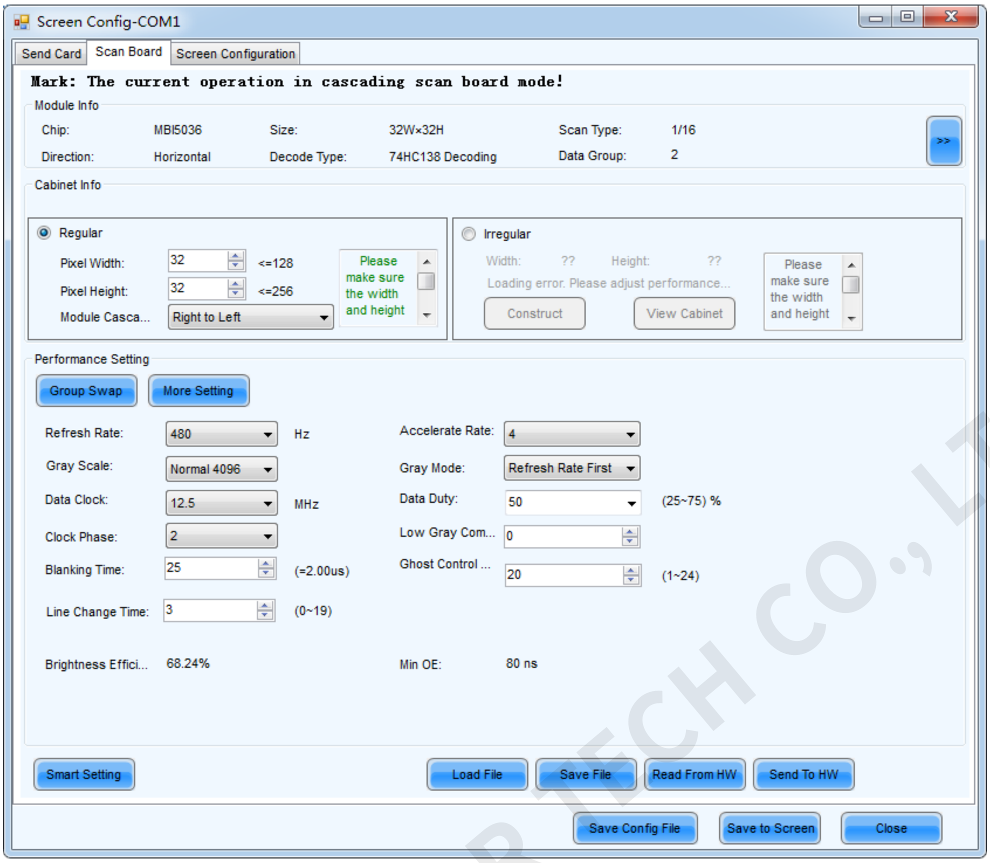
Customized Resolution: Users can set the value by themselves.

7.1.2.2 Smart Setting

Operating steps:

1) Select "**Screen Configuration**" option in the Fig.7-1, and click " **Next**" , enter **Scan Board**

window, as shown.


Screen Config-COM1
Send Card
Scan Board
Screen Configuration
>>
Construct
View Cabinet
Group Swap
More Setting
Smart Setting
Load File
Save File
Read From HW
Send To HW
Save Config File
Save to Screen
Close

Mark: The current operation in cascading scan board mode!

Module Info

Chip: MBI5036   Size: 32W×32H   Scan Type: 1/16

Direction: Horizontal   Decode Type: 74HC138 Decoding   Data Group: 2

Cabinet Info

● Regular

Pixel Width: 32 <=128

Pixel Height: 32 <=256

Module Casca... Right to Left

Please make sure the width and height

○ Irregular

Width: ?? Height: ??

Loading error. Please adjust performance...

Please make sure the width and height

Performance Setting

Refresh Rate: 480 Hz

Gray Scale: Normal 4096

Data Clock: 12.5 MHz

Clock Phase: 2

Blanking Time: 25 (≈2.00us)

Line Change Time: 3 (0~19)

Brightness Effici... 68.24%

Accelerate Rate: 4

Gray Mode: Refresh Rate First

Data Duty: 50 (25~75) %

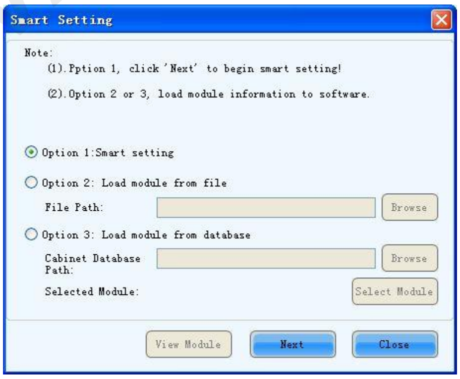
Low Gray Com... 0

Ghost Control ... 20 (1~24)

Min OE: 80 ns

Fig. 7-3 Screen Configuration page for manual configuration of LED display

2) Click “Smart Setting” button in “Scan Board” page and to open the Smart Setting dialog as shown below,


Smart Setting
Browse
Browse
Select Module
View Module
Next
Close

Note:

(1). Pption 1, click 'Next' to begin smart setting!

(2). Option 2 or 3, load module information to software.

● Option 1:Smart setting

○ Option 2: Load module from file

File Path:

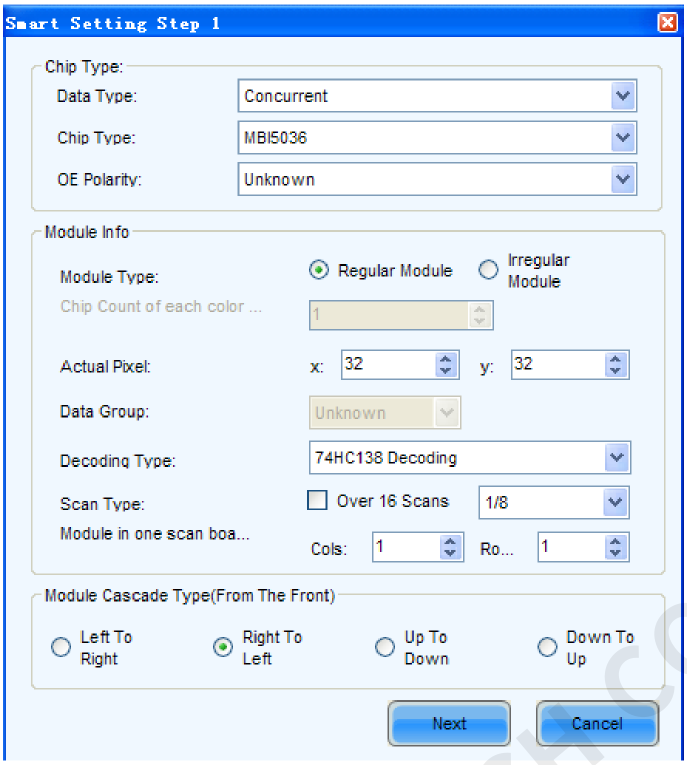
○ Option 3: Load module from database

Cabinet Database Path:

Selected Module:

Fig. 7-4 Smart Setting dialog

3) Select “Option 1: Smart setting” and click ” Next” to activate smart setting wizard. The Smart Setting Step 1 page will appear, as shown in Fig. 7-5,



Smart Setting Step 1

Chip Type:

Data Type: Concurrent

Chip Type: MBI5036

OE Polarity: Unknown

Module Info

Module Type: ● Regular Module ○ Irregular Module

Chip Count of each color ... 1

Actual Pixel: x: 32 y: 32

Data Group: Unknown

Decoding Type: 74HC138 Decoding

Scan Type: ☐ Over 16 Scans 1/8

Module in one scan boa... Cols: 1 Ro... 1

Module Cascade Type(From The Front)

○ Left To Right ● Right To Left ○ Up To Down ○ Down To Up

Fig. 7-5 Smart Setting Step 1

Data Type

Data type: the options have parallel drive, three-color 1-dot series, three-color 8-dot series, three-color 16-dot series, four-color 1-dot series, four-color 8-dot series, and four-color 16-dot series.

Chip Type

Select the drive chip type from the list according to what is actually used for the cabinets, e.g. MBI5036, MBI5042 etc.

OE Polarity

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

Module type

The option can be **regular module** or **irregular module**. (Irregular module is not supported by this version)

Actual Pixel

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

Decoding type

The options can be **Static**, **74HC138 Code** or **Straight Decoding**, choose according the type LED display module actually used.

Scan Type

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

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

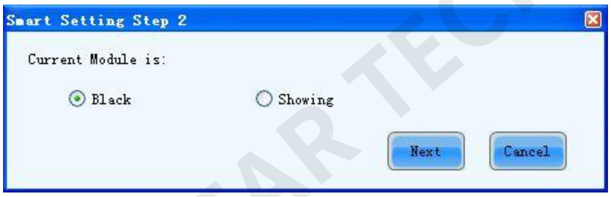
This is the size of the module array in the cabinet which is being configured by smart setting.

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 cascading direction.

☞	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. 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).

4) Click “Next” in “Smart Setting Step 1” page to enter ” Smart Setting Step 2” page as shown. Select according to the module status,


Smart Setting Step 2

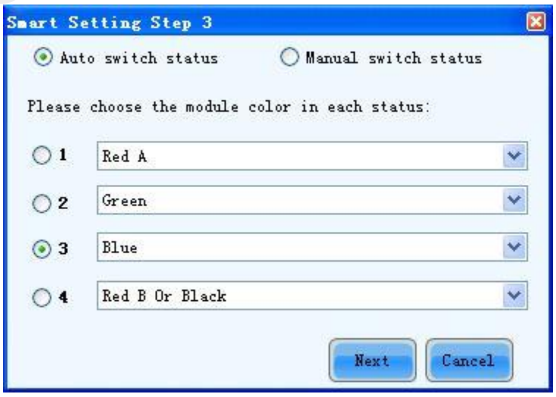
Current Module is:

● Black ○ Showing

Fig. 7-6 Smart Setting Step 2

☞	This step will be skipped if module OE polarity is known and set in Smart Setting Step 1.

5) Click “Next” in “Smart Setting Step 2” page to enter ” Smart Setting Step 3” page as shown,


Smart Setting Step 3

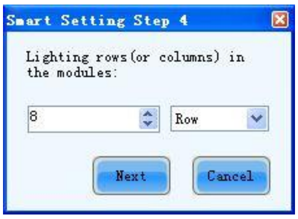
● Auto switch status ○ Manual switch status

Please choose the module color in each status:

○ 1 Red A
○ 2 Green
● 3 Blue
○ 4 Red B Or Black

Fig. 7-7 Smart Setting Step 3

6) Click ” Next” in “Smart Setting Step 3**”** page after selection to enter ” Smart Setting Step 4” page as shown,Enter the number of LED rows that are lightened in a module.

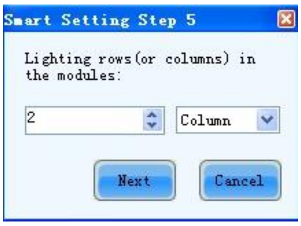

Smart Setting Step 4
Next
Cancel

Lighting rows(or columns) in the modules:

8 Row

Fig. 7-8 Smart Setting Step 4

7) Click "Next" in " Smart Setting Step 4 " page to enter "Smart Setting Step 5" page as shown, Enter the number of LED columns that are lightened in a module.

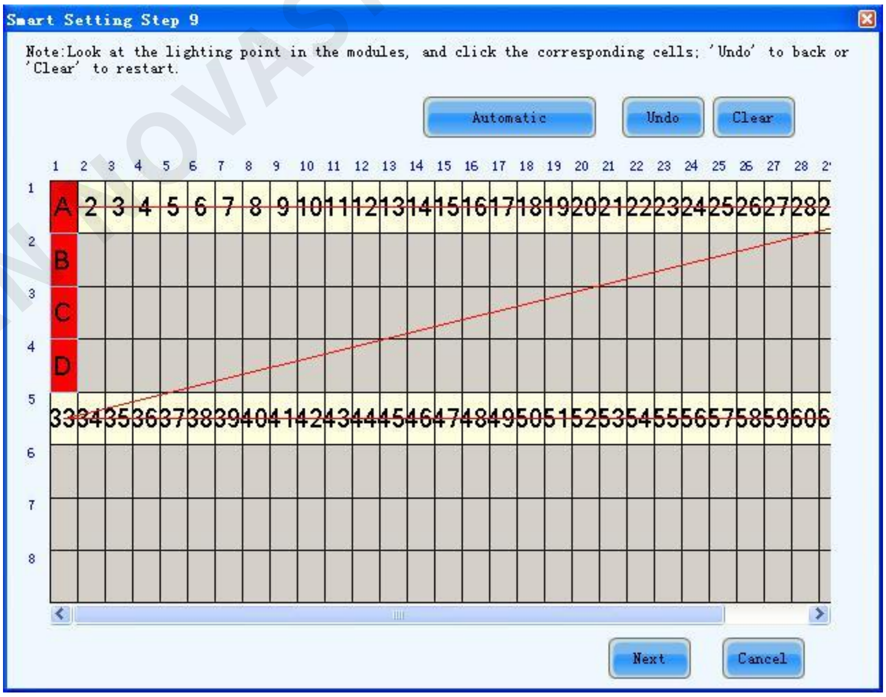

Smart Setting Step 5
Next
Cancel

Lighting rows(or columns) in the modules:

2 Column

Fig. 7-9 Smart Setting Step 5

8) Click "Next" in " Smart Setting Step 5 to enter "Smart Setting Step 9" page as shown,Click the corresponding grids according to the position of the lightened LEDs until no LED is lightened any more. A line of the lightened LEDs routing will be drawn at the same time. A message indicating the finish of the Smart Setting Step 9 will be shown when enough LEDs have been processed.


Smart Setting Step 9
Automatic
Undo
Clear
A
B
C
D
Next
Cancel

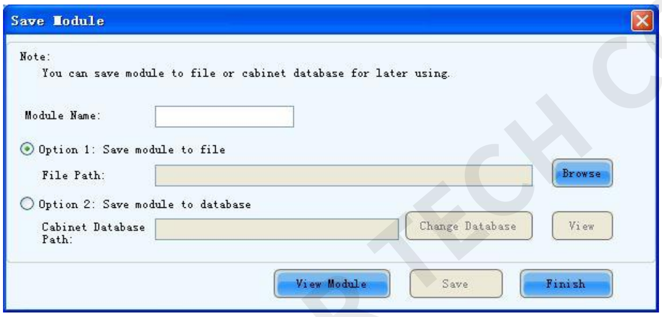
Note:Look at the lighting point in the modules, and click the corresponding cells; 'Undo' to back or 'Clear' to restart.

Fig. 7-10 Smart Setting Step 9

Press left button and drag the mouse to accomplish quick routing drawing.

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

9) Click “Next” In “Smart Setting Step 9” page to open “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 below. 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 Option 2 or 3 in ‘Smart Setting dialog ” 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.



Save Module

Note:
You can save module to file or cabinet database for later using.

Module Name:

● Option 1: Save module to file
File Path:

○ Option 2: Save module to database
Cabinet Database Path:

Fig. 7-11 Save Module dialog

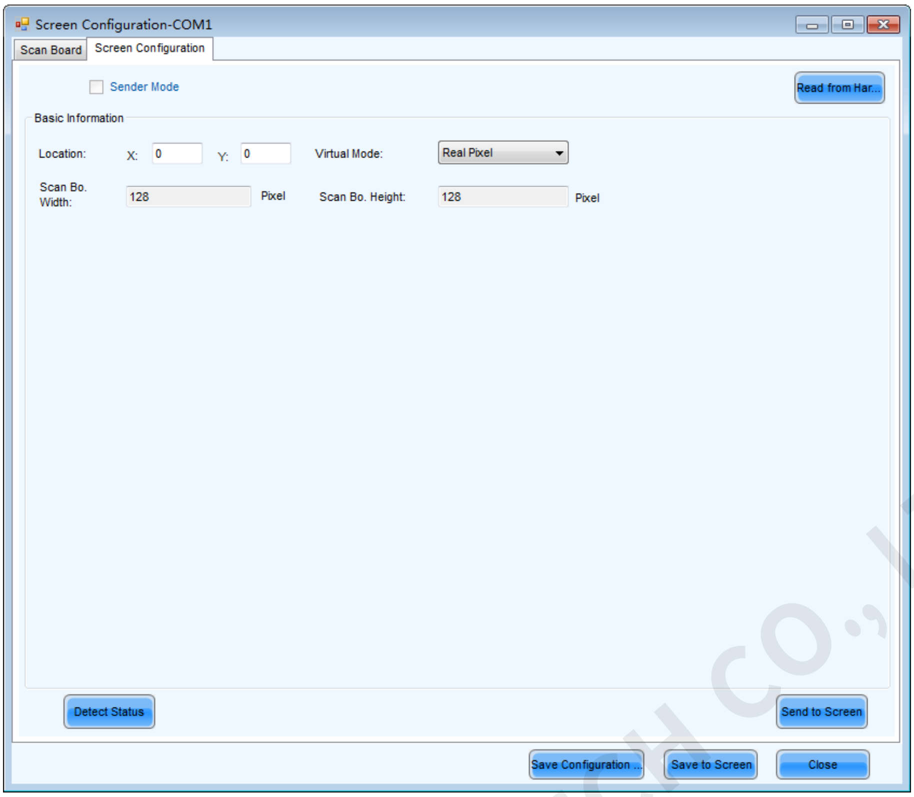
The saved module settings can be used in Fig. 7-4 by choosing option 2 or 3 to simplify smart setting process.

7.1.2.3 LED Display Configuration

According to the quantity of scan board, there’ re two different modes for LED display configuration: **No scan board cascaded mode** or **cascading scan board mode**.

1) No scan board cascaded mode (one PSD100 Asynchronous card only)

Switch to “Screen Config” page in Fig. 7-1, interface of No scan board cascaded mode as shown below:


Screen Configuration-COM1
Scan Board
Screen Configuration
☐ Sender Mode
Read from Har...
Basic Information
Detect Status
Send to Screen
Save Configuration ...
Save to Screen
Close

Location: X: 0 Y: 0 Virtual Mode: Real Pixel

Scan Bo. Width: 128 Pixel Scan Bo. Height: 128 Pixel

Fig. 7-12 Screen config in No scan board cascaded mode

Read form hardware

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

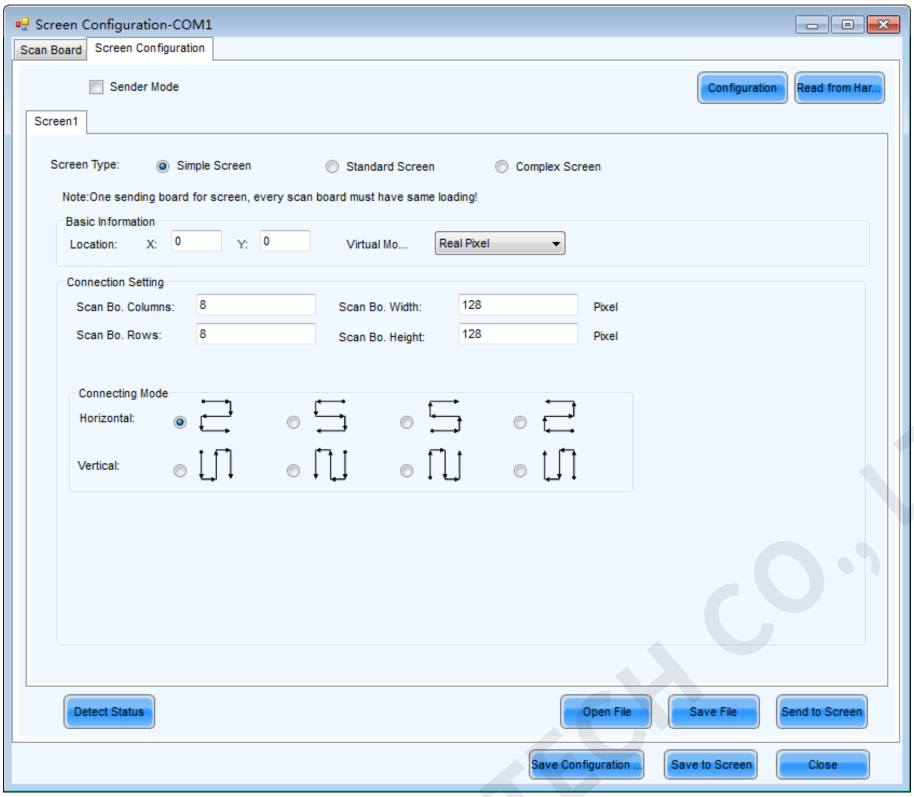
2) **Cascading scan board mode (PSD100 Asynchronous card cascading MRV300/MRV320 scan board)**

The mode of cascade receiving card is divided into sending card mode and multi-display configuration. The former is asynchronous card without box carrier, equal to sending card. Multi-display configuration is usually used for dual panels. Both panels play the same picture. Multi-display mode does not support correction.

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

a) **Simple Screen Configuration**

Simple screen means each scan board drives same pixel array, edit items below according to LED display status.


Screen Configuration-COM1
Scan Board
Screen Configuration
Configuration
Read from Har...
Screen1
Detect Status
Open File
Save File
Send to Screen
Save Configuration ...
Save to Screen
Close

☐ Sender Mode

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 Mo... Real Pixel

Connection Setting

Scan Bo. Columns: 8 Scan Bo. Width: 128 Pixel

Scan Bo. Rows: 8 Scan Bo. Height: 128 Pixel

Connecting Mode

Horizontal: ● ○ ○ ○

Vertical: ○ ○ ○ ○

Fig. 7-13 simple screen configuration page

Sender Mode

If asynchronous card carries no box carrier, please tick this item;

Open 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 Screen

This is used to send the LED display configuration settings to the connected PSD100 Asynchronous card.

Save to Screen

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

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 LEDs or virtual 4 LEDs.

Scan Board Columns/Rows

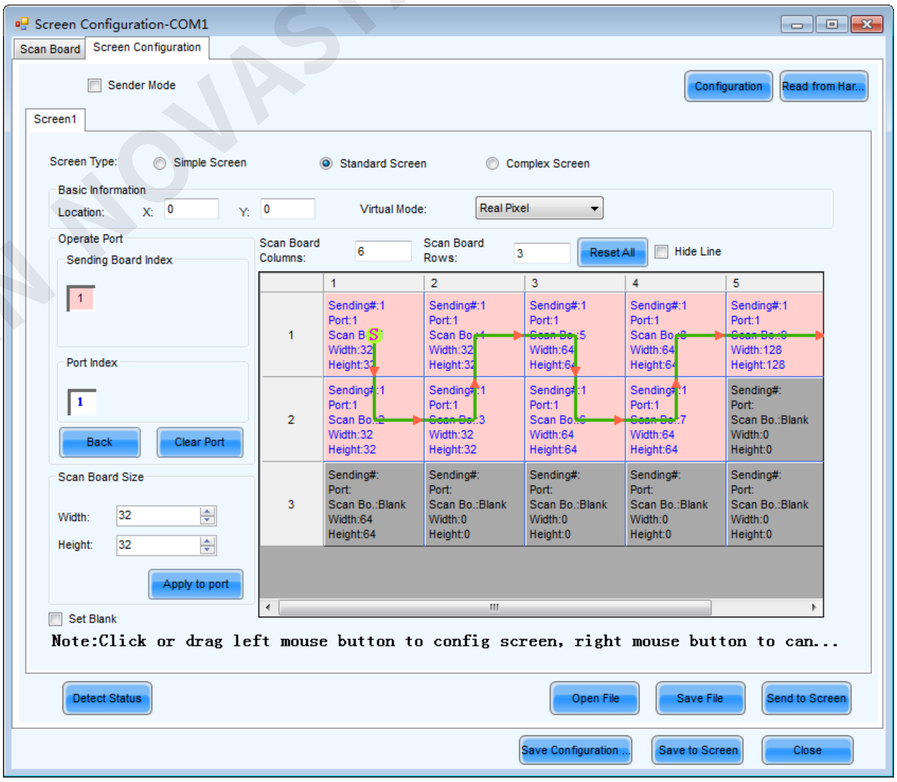
These are the quantity of columns and rows of the scan boards (receiving cards) array of the LED display.

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 (receiving card). They must be set the same as those set in the Scan Board page.

b) Standard Screen Configuration

Configure scan boards connection routing manually, and each scan board could drive different pixel array.


Screen Configuration-COM1
Scan Board
Screen Configuration
Configuration
Read from Har...
Screen1
Basic Information
Operate Port
Sending Board Index
Port Index
Back
Clear Port
Scan Board Size
Apply to port
Reset All
Detect Status
Open File
Save File
Send to Screen
Save Configuration ...
Save to Screen
Close

☐ Sender Mode

Screen Type: ○ Simple Screen ● Standard Screen ○ Complex Screen

Location: X: 0 Y: 0 Virtual Mode: Real Pixel

Sending Board Index: 1

Port Index: 1

Scan Board Columns: 6 Scan Board Rows: 3 ☐ Hide Line

Width: 32

Height: 32

☐ Set Blank

	1	2	3	4	5
1	Sending#:1 Port:1 Scan B Width:32 Height:32	Sending#:1 Port:1 Scan Bo.:4 Width:32 Height:32	Sending#:1 Port:1 Scan Bo.:5 Width:64 Height:64	Sending#:1 Port:1 Scan Bo.:8 Width:64 Height:64	Sending#:1 Port:1 Scan Bo.:9 Width:128 Height:128
2	Sending#:1 Port:1 Scan Bo.:2 Width:32 Height:32	Sending#:1 Port:1 Scan Bo.:3 Width:32 Height:32	Sending#:1 Port:1 Scan Bo.:6 Width:64 Height:64	Sending#:1 Port:1 Scan Bo.:7 Width:64 Height:64	Sending#: Port: Scan Bo.:Blank Width:0 Height:0
3	Sending#: Port: Scan Bo.:Blank Width:64 Height:64	Sending#: Port: Scan Bo.:Blank Width:0 Height:0	Sending#: Port: Scan Bo.:Blank Width:0 Height:0	Sending#: Port: Scan Bo.:Blank Width:0 Height:0	Sending#: Port: Scan Bo.:Blank Width:0 Height:0

Note:Click or drag left mouse button to config screen, right mouse button to can...

Fig. 7-14 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 type of the LED display. The option could be real pixel or virtual 3 LEDs or virtual 4 LEDs.

Scan Board Columns/Rows

These are the quantity of columns and rows of the scan board (receiving card) array of the LED display. A sketch map of the scan board array as Fig.8-13 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.

Back

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

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 drove by current scan board.

Apply to port

Click this button to set the pixel array sizes of all scan boards connected to the current Ethernet port the same as that of the current scan board.

Set Blank

Select this if the current position (pixel array of the current scan board) needs to be left unset.

Set Relay

The current scan board ' size is "0" .

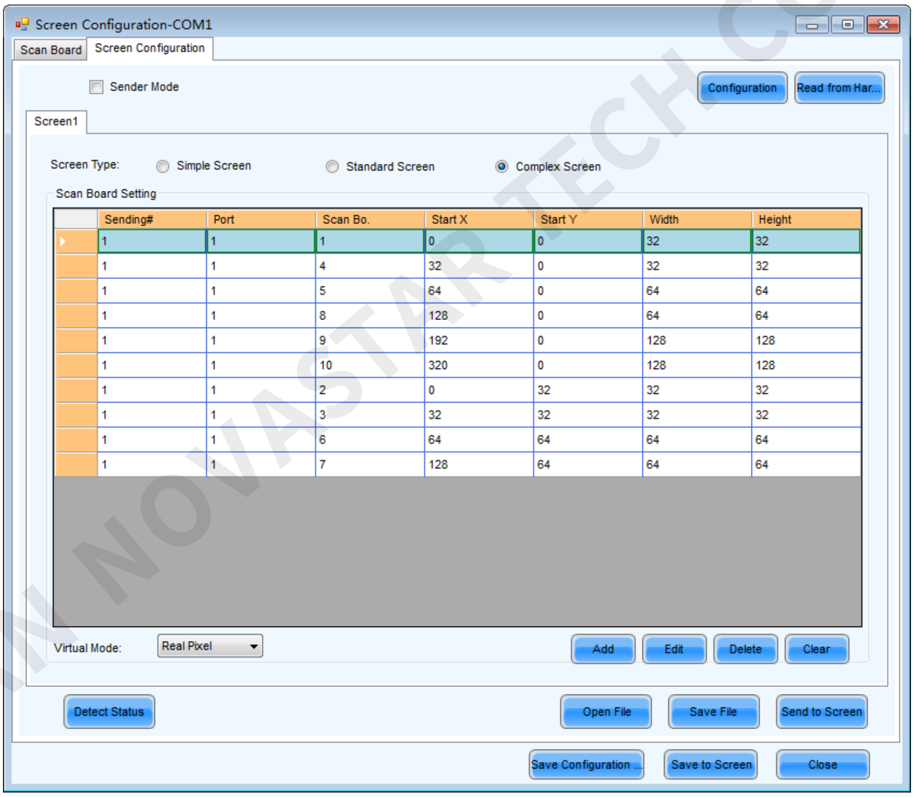
Standard screen configuration method:

The configuration operation is easy. First, set the index as 1 for the receiving card (scan board) directly connected to the asynchronous card through an Ethernet port and input values for other parameters. And then set the index as 2 for the receiving card which is connected to the first (index 1) receiving card and also input values for other parameter for the No.2 receiving card. Do the same configuration operation until all receiving cards are set. The configuration is completed by then. The pixel array sizes of the receiving cards can be different from each other, and can also be left unset. After configuration, click corresponding button to send the configuration information to the receiving card or save it in the computer.

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

c) Complex Screen Configuration

Need to configure each scan board’ s starting Coordinates and pixel array respectively.


Screen Configuration-COM1
Scan Board
Screen Configuration
Configuration
Read from Har...
Screen1
Scan Board Setting
Add
Edit
Delete
Clear
Detect Status
Open File
Save File
Send to Screen
Save Configuration ...
Save to Screen
Close

☐ Sender Mode

Screen Type: ○ Simple Screen ○ Standard Screen ● Complex Screen

Sending#	Port	Scan Bo.	Start X	Start Y	Width	Height
1	1	1	0	0	32	32
1	1	4	32	0	32	32
1	1	5	64	0	64	64
1	1	8	128	0	64	64
1	1	9	192	0	128	128
1	1	10	320	0	128	128
1	1	2	0	32	32	32
1	1	3	32	32	32	32
1	1	6	64	64	64	64
1	1	7	128	64	64	64

Virtual Mode: Real Pixel

Fig. 7-15 complex screen configuration page

Add

Click **Add** to access the page for scan boards information setting, such as 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 scan boards.

Delete

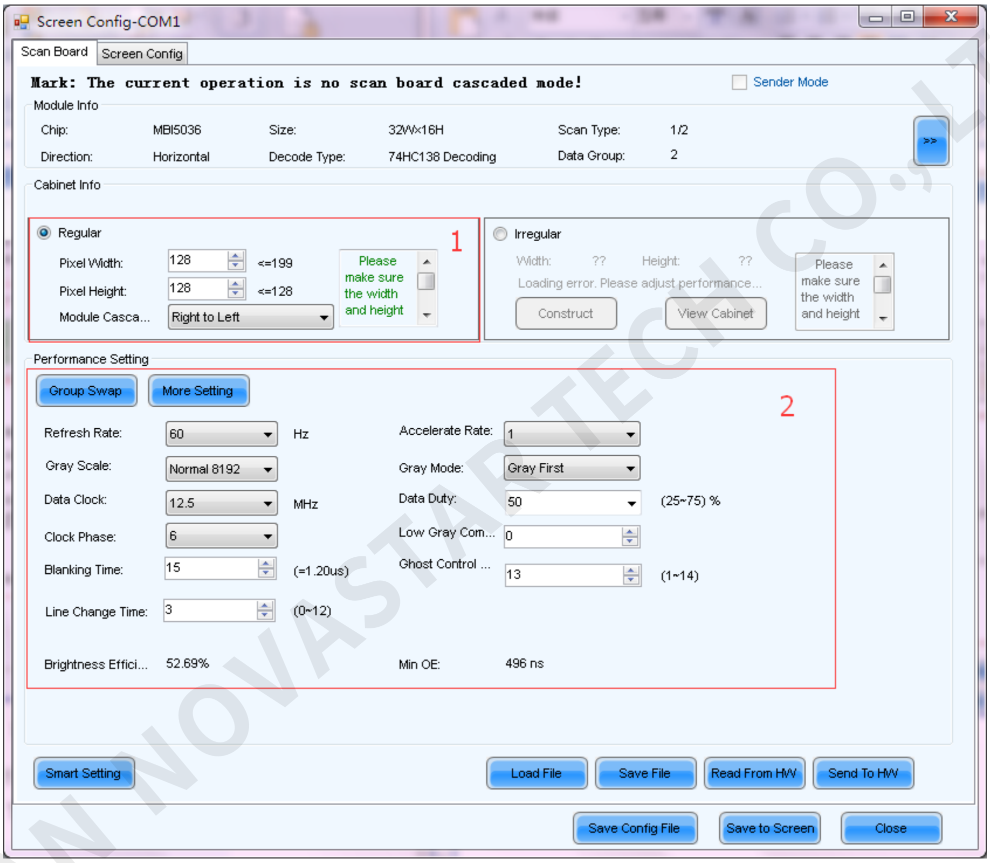
To delete the selected scan board from the scan boards list.

Clear

To delete all scan boards from the list.

7.1.3 Set the Cabinet Information

Switch to Scan Board page,


Screen Config-COM1
Scan Board
Screen Config
☐ Sender Mode
>>
1
2
Construct
View Cabinet
Group Swap
More Setting
Smart Setting
Load File
Save File
Read From HW
Send To HW
Save Config File
Save to Screen
Close

Mark: The current operation is no scan board cascaded mode!

Module Info

Chip: MBI5036 Size: 32W×16H Scan Type: 1/2

Direction: Horizontal Decode Type: 74HC138 Decoding Data Group: 2

Cabinet Info

● Regular

Pixel Width: 128 <=199

Pixel Height: 128 <=128

Module Casca... Right to Left

Please make sure the width and height

○ Irregular

Width: ?? Height: ??

Loading error. Please adjust performance...

Please make sure the width and height

Performance Setting

Refresh Rate: 60 Hz

Gray Scale: Normal 8192

Data Clock: 12.5 MHz

Clock Phase: 6

Blanking Time: 15 (=1.20us)

Line Change Time: 3 (0~12)

Brightness Effici... 52.69%

Accelerate Rate: 1

Gray Mode: Gray First

Data Duty: 50 (25~75) %

Low Gray Com... 0

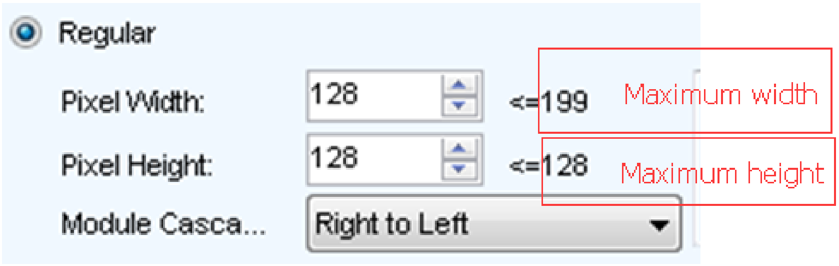
Ghost Control ... 13 (1~14)

Min OE: 496 ns

Fig. 7-16 set the cabinet info.

Cabinet Information

Pixel array size and module cascade direction can be set in this panel. Note that the Regular panel is for regular shape cabinet parameters setting and the Irregular panel is for irregular shape cabinet parameters setting. (Irregular shape cabinet is not supported by this version) Shown in Fig. 7-17 is the Regular Cabinet Info panel which is circled and marked as area 1 in Fig. 7-16.



● Regular

Pixel Width: 128 <=199

Pixel Height: 128 <=128

Module Casca... Right to Left

Fig. 7-17 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 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 higher 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 drive chips and module design, the maximum width is also limited.

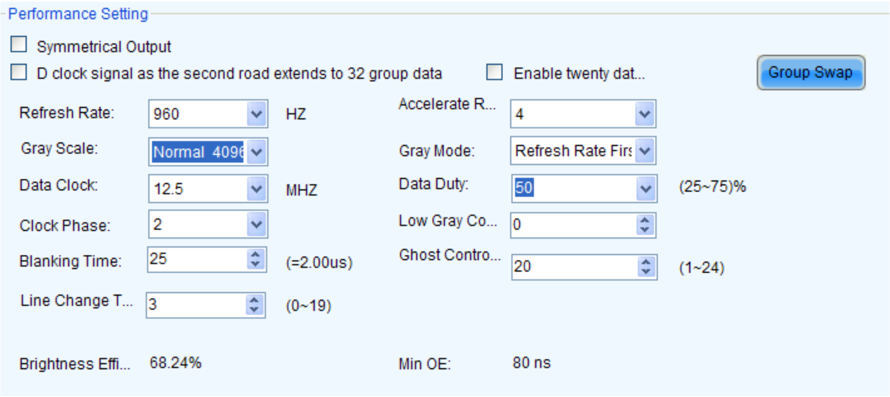
Maximum Height

The Maximum Height depends on the module design.

☞	1. If the module cascade direction is from left to right or from right to left, then as mentioned above, the Maximum Width depends on the parameters such 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

7.1.4 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 which is circled and marked as area 2 in Fig. 7-16.



Performance Setting

☐ Symmetrical Output

☐ D clock signal as the second road extends to 32 group data

☐ Enable twenty dat...

Refresh Rate: 960 HZ

Gray Scale: Normal 4096

Data Clock: 12.5 MHZ

Clock Phase: 2

Blanking Time: 25 (=2.00us)

Line Change T... 3 (0~19)

Accelerate R... 4

Gray Mode: Refresh Rate Firs

Data Duty: 50 (25~75)%

Low Gray Co... 0

Ghost Contro... 20 (1~24)

Brightness Effi... 68.24%

Min OE: 80 ns

Fig. 7-18 the Performance setting panel

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.

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** cannot be selected at the same time.

Enable 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 not be selected at the same time.

Group Swap

Adjust the order of date group

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.

Accelerate Rate

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

Gray Mode

There are three options for Gray Mode, Brightness First, Refresh Rate First and Gray First. Brightness First mode is for normal use and it has lower brightness loss. In Refresh Rate First mode, image refresh rate can be greatly increased, but the cost is 8% of brightness loss. And Gray First mode will cost 50% brightness to get a better gray when display with low bright.

Data Clock

This is the shift clock frequency. The shift clock frequency depends on the performance of drive chips and the circuit design of the modules. The higher the drive 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 scan board can support.

Clock 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 drive 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.

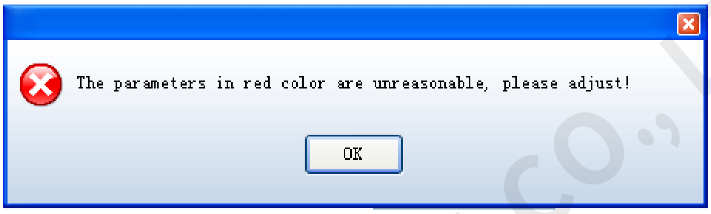
Line Change Time

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

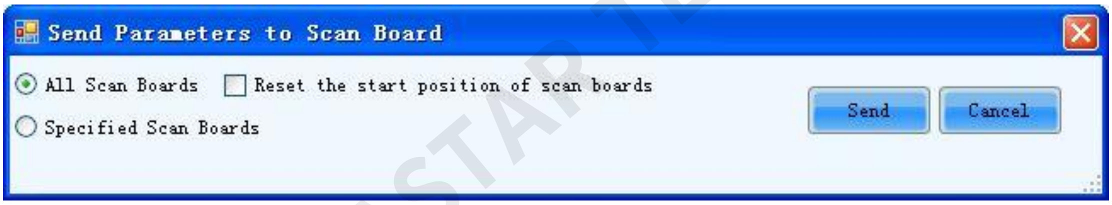
Time to weaken the decoy of scan mode LED displays.

The steps of performance parameters adjustment are as follows:

1) Adjust the parameters in the Performance Setting panel (Fig. 7-18) until the Maximum Width and Height shown in the Cabinet info panel (Fig. 7-17) are larger than the pixel array size of the cabinet. Then click Send To HW in Fig. 7-16.

⚠	If the message as follows appears after clicking the **Send To HW** button, it means there are parameters not properly set in the Performance setting panel or the Cabinet info panel. Those parameters will be in red. Reset those parameters and click **Send To HW**  The parameters in red color are unreasonable, please adjust! button again

2) If all parameter settings are acceptable, the dialog as shown in Fig. 7-19 will appear after clicking the **Send To HW** button.



Send Parameters to Scan Board

● All Scan Boards ☐ Reset the start position of scan boards

○ Specified Scan Boards

Fig. 7-19 Send parameters to all scan boards

All Scan Boards

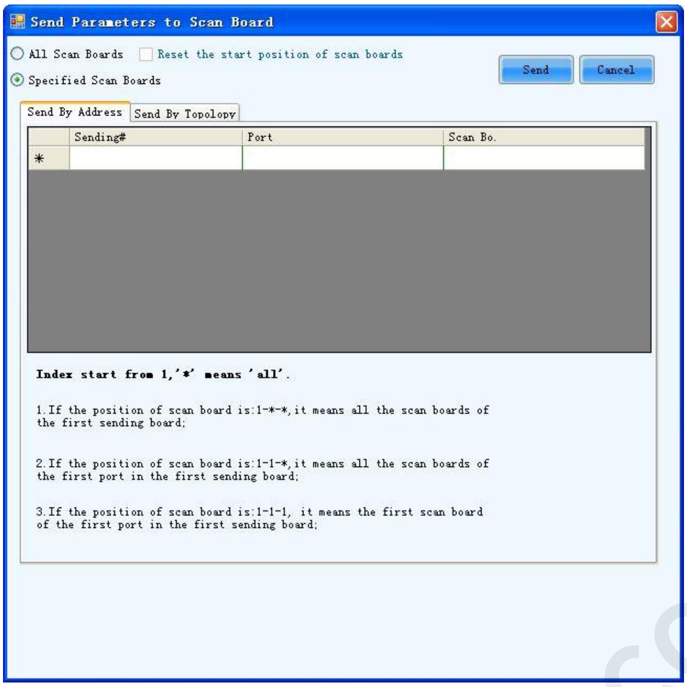
When this option is selected, parameter settings will be sent to all scan boards (scan boards).

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 scan boards will be set as (0,0). Thus all relating scan boards 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. 7-20 and Fig. 7-21.


Send Parameters to Scan Board
○ All Scan Boards
☐ Reset the start position of scan boards
● Specified Scan Boards
Send
Cancel
Send By Address
Send By Topology
Sending#
Port
Scan Bo.
*

Index start from 1,'*' means 'all'.

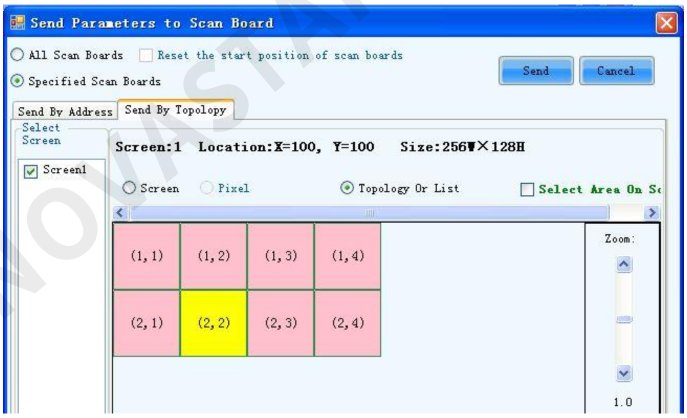
1.If the position of scan board is:1-*-*,it means all the scan boards of the first sending board;

2.If the position of scan board is:1-1-*,it means all the scan boards of the first port in the first sending 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;

Fig. 7-20 the Send by Address page

Shown in Fig. 7-20 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.


Send Parameters to Scan Board
○ All Scan Boards
☐ Reset the start position of scan boards
● Specified Scan Boards
Send
Cancel
Send By Address
Send By Topology
Select Screen
☑ Screen1
○ Screen
○ Pixel
● Topology Or List
☐ Select Area On Sc
(1,1)
(1,2)
(1,3)
(1,4)
(2,1)
(2,2)
(2,3)
(2,4)
Zoom:
1.0

Screen:1 Location:X=100, Y=100 Size:256W×128H

Fig. 7-21 the Send by Topology page

Shown in Fig. 7-21 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.

3) Click Send, and the parameter settings will be sent to scan boards.

7.1.5 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 to Screen in the **Screen Config** page (Fig. 7-3).

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

7.1.6 Save/Load Configuration Files

There are four types of configuration files at present, the module configuration file, the scan board 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.

Scan board Configuration File

Saved in a scan board configuration file are the settings of scan boards. Scan board 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 scan boards 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

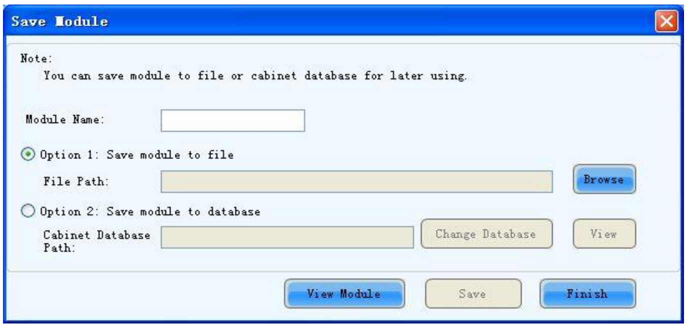
Saved is a system configuration file is the complete setting information of a LED display control system. It can be used to quickly recover a LED display control system from error, or to quickly start a LED display.

1) **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 **7.1.2.2 Smart Setting ->**

9) for details). Shown is the dialog for saving module settings to a module configuration file.



Note:
You can save module to file or cabinet database for later using.

Module Name:

● Option 1: Save module to file

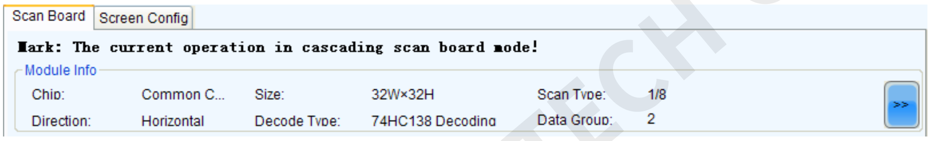
File Path:

○ Option 2: Save module to database

Cabinet Database Path:

Fig. 7-22 Dialog for saving module setting to a module configuration file

The other way is to click >> button in the **Module Info** panel of the **Scan Board** page. The module settings can be saved to a module configuration file through the opened dialog. Shown in Fig. 7-23 is **Module Info** panel of the **Scan Board** page that the >> button is on.



Mark: The current operation in cascading scan board mode!

Chip: Common C... Size: 32W×32H Scan Type: 1/8

Direction: Horizontal Decode Type: 74HC138 Decoding Data Group: 2

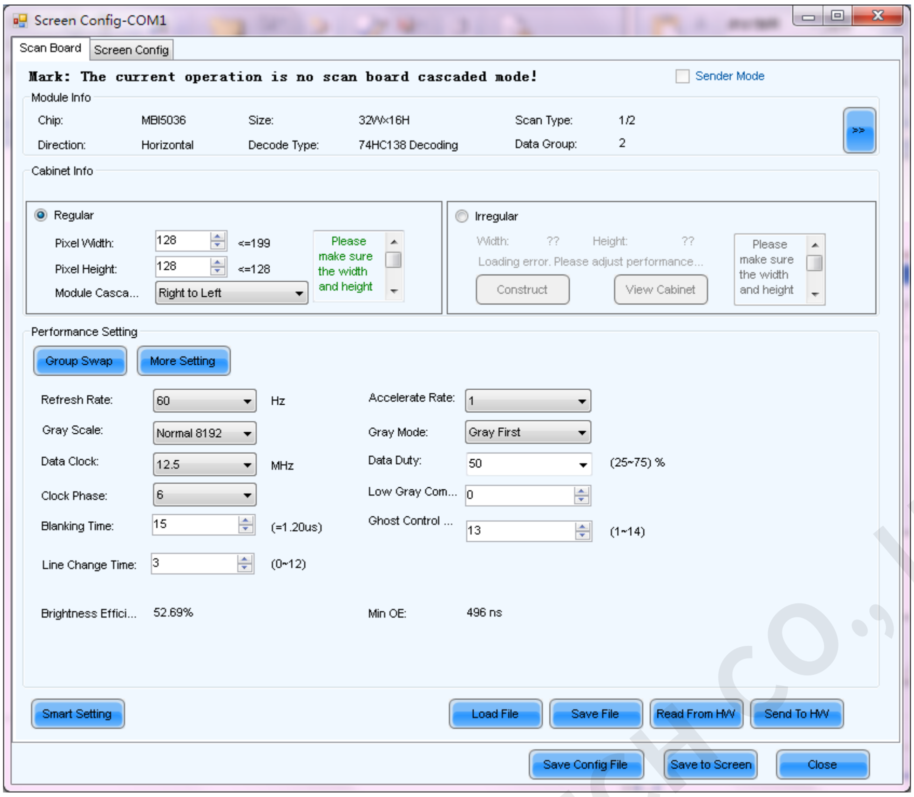
Fig. 7-23 Module Info panel

2) Load a module configuration file

In smart setting step 2 (Please refer to **7.1.2.2 Smart Setting -> 2**), select **Option 2: Load module from file** in the **Smart Setting** dialog and follow the instructions.

3) Save a scan board configuration file

To save settings to a scan board configuration file, click Save File at the bottom of the **Scan Board** page in the **Screen Config** window and follow the instructions. Shown in Fig. 7-24 is the **Scan Board** page.


Screen Config-COM1
Scan Board
Screen Config
>>
Construct
View Cabinet
Group Swap
More Setting
Smart Setting
Load File
Save File
Read From HW
Send To HW
Save Config File
Save to Screen
Close

Mark: The current operation is no scan board cascaded mode!

☐ Sender Mode

Module Info

Chip: MBI5036 Size: 32W×16H Scan Type: 1/2

Direction: Horizontal Decode Type: 74HC138 Decoding Data Group: 2

Cabinet Info

● Regular

Pixel Width: 128 <=199

Pixel Height: 128 <=128

Module Casca... Right to Left

Please make sure the width and height

○ Irregular

Width: ?? Height: ??

Loading error. Please adjust performance...

Please make sure the width and height

Performance Setting

Refresh Rate: 60 Hz

Gray Scale: Normal 8192

Data Clock: 12.5 MHz

Clock Phase: 6

Blanking Time: 15 (≈1.20us)

Line Change Time: 3 (0~12)

Brightness Effici... 52.69%

Accelerate Rate: 1

Gray Mode: Gray First

Data Duty: 50 (25~75) %

Low Gray Com... 0

Ghost Control ... 13 (1~14)

Min OE: 496 ns

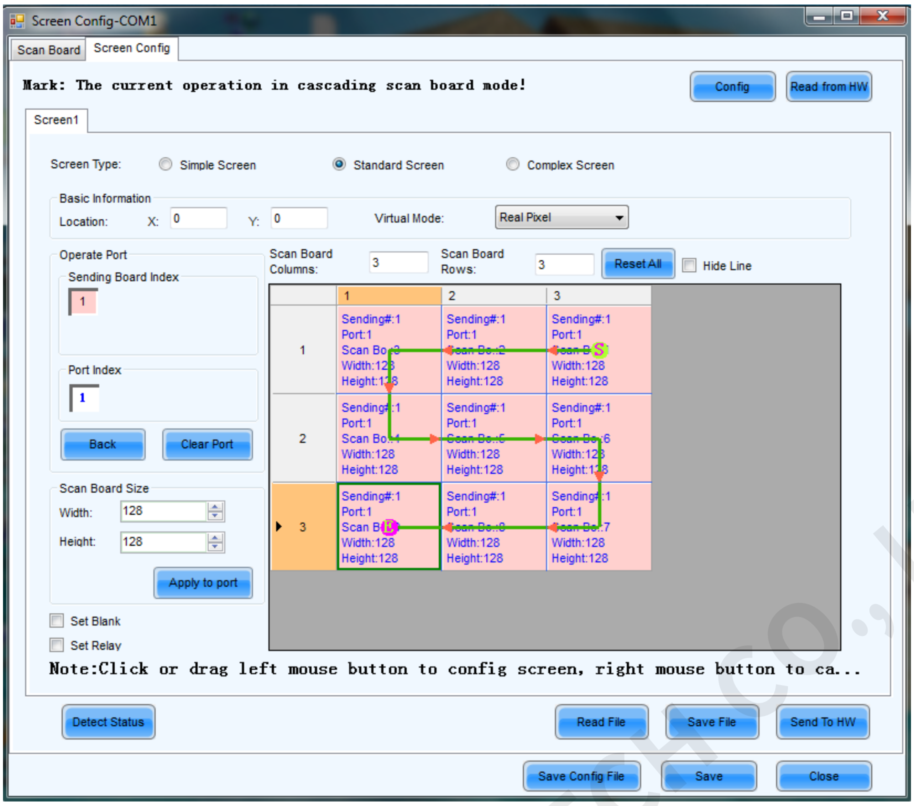
Fig. 7-24 Scan Board page

4) Load a scan board configuration file

To load a scan board configuration file, click Load File at the bottom of the **Scan Board** page in the **Screen Config** window and follow the instructions.

5) Save a LED display configuration file

To save settings to a LED display configuration file, click Save File at the bottom of the **Screen Config** page of the **Screen Config** window and follow the instructions. Shown in Fig. 7-25 is the **Screen Config** page.


Screen Config-COM1
Scan Board
Screen Config
Config
Read from HW
Screen1
Back
Clear Port
Reset All
Apply to port
Detect Status
Read File
Save File
Send To HW
Save Config File
Save
Close

Mark: The current operation in cascading scan board mode!

Screen Type: ○ Simple Screen ● Standard Screen ○ Complex Screen

Basic Information

Location: X: 0 Y: 0 Virtual Mode: Real Pixel

Operate Port

Sending Board Index: 1

Port Index: 1

Scan Board Columns: 3 Scan Board Rows: 3 ☐ Hide Line

	1	2	3
1	Sending#:1 Port:1 Scan Bo..:3 Width:128 Height:128	Sending#:1 Port:1 Scan Bo..:2 Width:128 Height:128	Sending#:1 Port:1 Scan B Width:128 Height:128
2	Sending#:1 Port:1 Scan Bo..:4 Width:128 Height:128	Sending#:1 Port:1 Scan Bo..:5 Width:128 Height:128	Sending#:1 Port:1 Scan Bo..:6 Width:128 Height:128
3	Sending#:1 Port:1 Scan B Width:128 Height:128	Sending#:1 Port:1 Scan Bo..:8 Width:128 Height:128	Sending#:1 Port:1 Scan Bo..:7 Width:128 Height:128

Scan Board Size

Width: 128

Height: 128

☐ Set Blank

☐ Set Relay

Note:Click or drag left mouse button to config screen, right mouse button to ca...

Fig. 7-25 Screen config page

6) Load a LED display configuration file

To load a LED display configuration file, click Save File at the bottom of the **Screen Config** page in the **Screen Config** window and follow the instructions.

7) Save a system configuration file

To save settings to a system configuration file, click Save Config File at the bottom of the **Screen Config** window and follow the instructions.

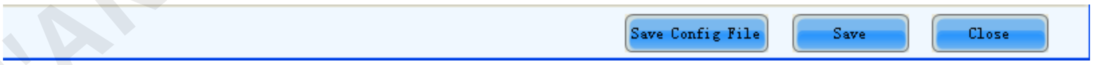

Save Config File
Save
Close

Fig. 7-26 Screen config window

8) Load a system configuration file

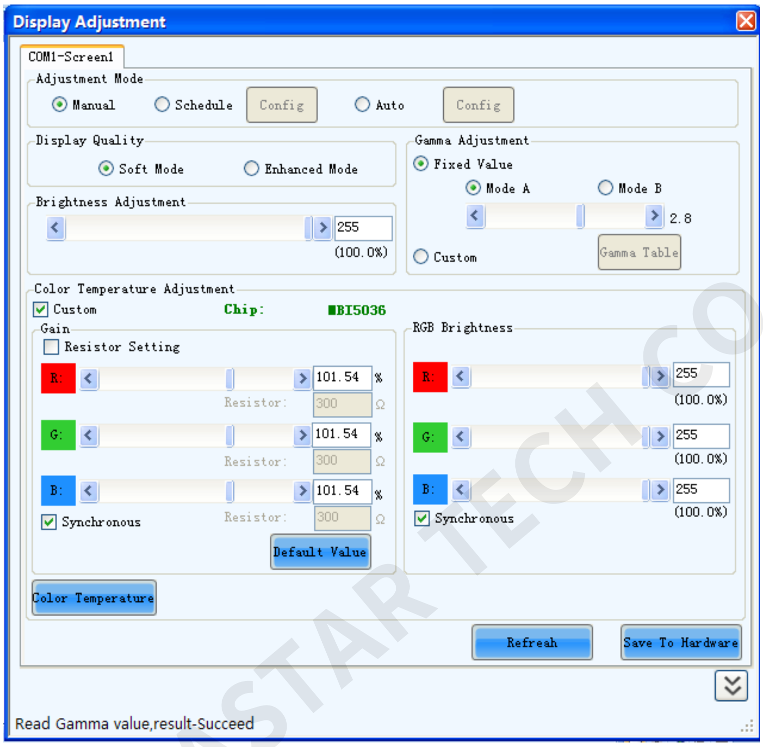
Please refer to 7.1.1 Start with System Configuration Files for details.

7.2 Brightness Adjustment, Display Quality, Gamma and Current Gain

Click **Brightness** button from the toolbar or select **Tools**->**Brightness** from the main menu of the

NovaLCT-Pluto application main interface to open the **Display Adjustment** page for brightness, display quality, Gamma and current gain adjustment. Shown in Fig. 7-27 is the **Display Adjustment** page.

7.2.1 Manual Adjustment


Display Adjustment
COM1-Screen1
Adjustment Mode
● Manual
○ Schedule
Config
○ Auto
Config
Display Quality
● Soft Mode
○ Enhanced Mode
Gamma Adjustment
● Fixed Value
● Mode A
○ Mode B
2.8
○ Custom
Gamma Table
Brightness Adjustment
255
(100.0%)
Color Temperature Adjustment
☑ Custom
Chip:
BI5036
Gain
☐ Resistor Setting
R: 101.54 %
Resistor: 300 Ω
G: 101.54 %
Resistor: 300 Ω
B: 101.54 %
Resistor: 300 Ω
☑ Synchronous
Default Value
RGB Brightness
R: 255
(100.0%)
G: 255
(100.0%)
B: 255
(100.0%)
☑ Synchronous
Color Temperature
Refresh
Save To Hardware

Read Gamma value,result-Succeed

Fig. 7-27 manual adjustment page of Display adjustment

Display Quality

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

Gamma Adjustment

If **Fixed Value** is selected, the Gamma coefficient can be any value between 1 and 4. And the default value is 2.8. Select **Custom** to manually define the Gamma table.

Brightness Adjustment

Brightness can be adjusted by the slide bar. All together there are 256 levels of brightness.

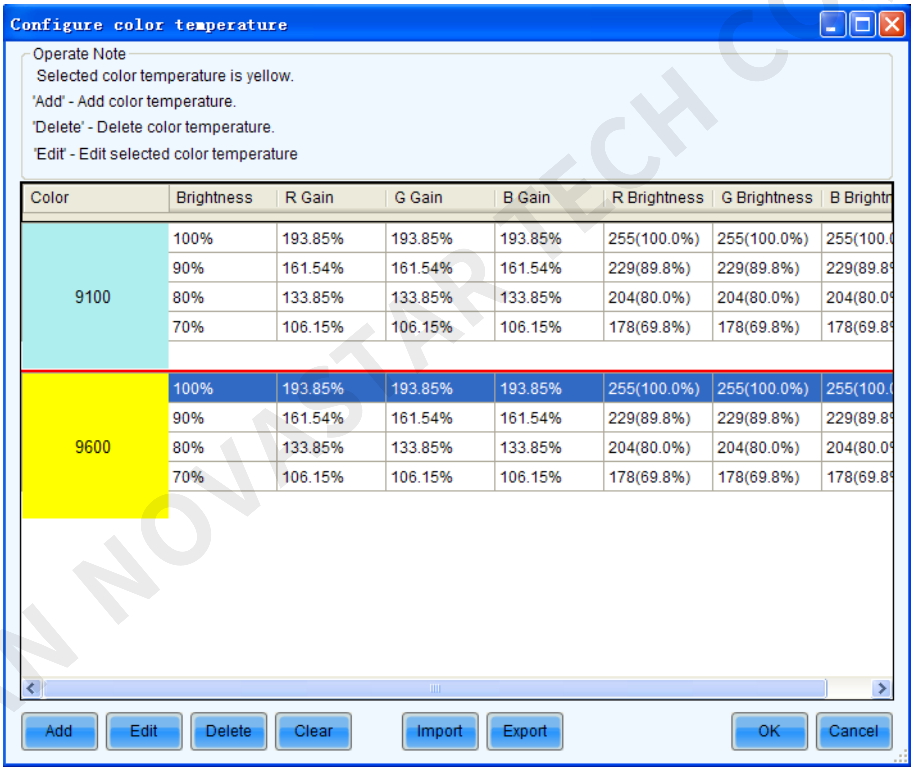
Color Temperature Adjustment

Color temperature adjustment can be done in two ways, **customization** and color **temperature**

table. Choose one as you want. Select **Custom** and the color temperature can be adjusted through the brightness and current gains of Red, Green and Blue components. Click **Color Temperature** button to open the dialog for color temperature table configuration. Color temperature can be adjusted by changing the items in the table.

1. Current gain adjustment option won’ t be available if the LED drive chips do not support current gain adjustment.
2. 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, so that if the color temperature table has been set, NovaLCT-Pluto will adjust the LED display settings according to the current brightness setting and keep the color temperature unchanged.

Configure the Color Temperature Table



Operate Note
Selected color temperature is yellow.
'Add' - Add color temperature.
'Delete' - Delete color temperature.
'Edit' - Edit selected color temperature

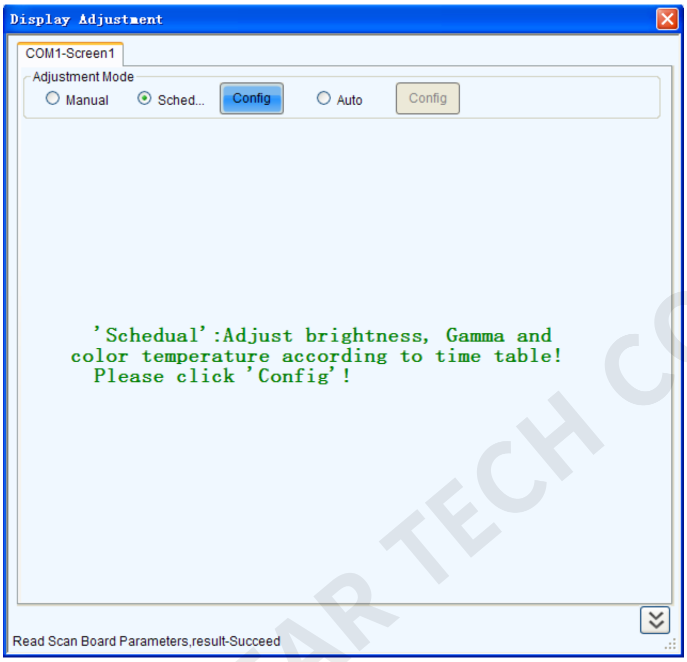
Color	Brightness	R Gain	G Gain	B Gain	R Brightness	G Brightness	B Brightn
9100	100%	193.85%	193.85%	193.85%	255(100.0%)	255(100.0%)	255(100.(
	90%	161.54%	161.54%	161.54%	229(89.8%)	229(89.8%)	229(89.8
	80%	133.85%	133.85%	133.85%	204(80.0%)	204(80.0%)	204(80.0
	70%	106.15%	106.15%	106.15%	178(69.8%)	178(69.8%)	178(69.8
9600	100%	193.85%	193.85%	193.85%	255(100.0%)	255(100.0%)	255(100.(
	90%	161.54%	161.54%	161.54%	229(89.8%)	229(89.8%)	229(89.8
	80%	133.85%	133.85%	133.85%	204(80.0%)	204(80.0%)	204(80.0
	70%	106.15%	106.15%	106.15%	178(69.8%)	178(69.8%)	178(69.8

Fig. 7-28 Color Temperature Table configuration page

7.2.2 Schedule Adjustment

Select **Schedule** in the **Display Adjustment** page to open schedule adjustment page. Schedule adjustment is to generate a time table and the LED display brightness, Gamma, color temperature will be adjusted according to the time table. Shown in Fig. 7-29 is the schedule adjustment page of the **Display Adjustment** page.

Click **Config** button according to the instruction and the **Config Schedule File** page will be opened. Shown in Fig. 7-30 is the **Config Schedule File** page. Create the schedule (time table) for adjustment and NovaLCT-Pluto will perform the adjustment operations automatically according to the schedule.


Display Adjustment
COM1-Screen1
Config
Config

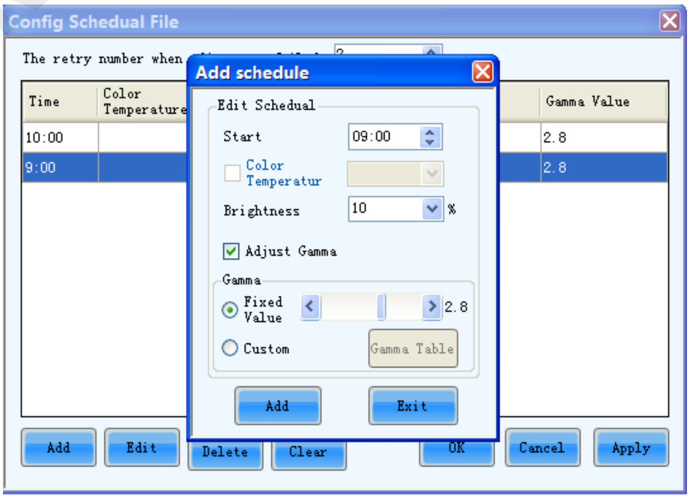
Adjustment Mode
○ Manual ● Sched... ○ Auto

'Schedual':Adjust brightness, Gamma and color temperature according to time table! Please click 'Config'!

Read Scan Board Parameters,result-Succeed

Fig. 7-29 Schedule setting page of the Display Adjustment

☞	The time of the computer on which NovaLCT-Pluto 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.


Config Schedual File
Add schedule
Gamma Table
Add
Exit
Add
Edit
Delete
Clear
OK
Cancel
Apply

The retry number when

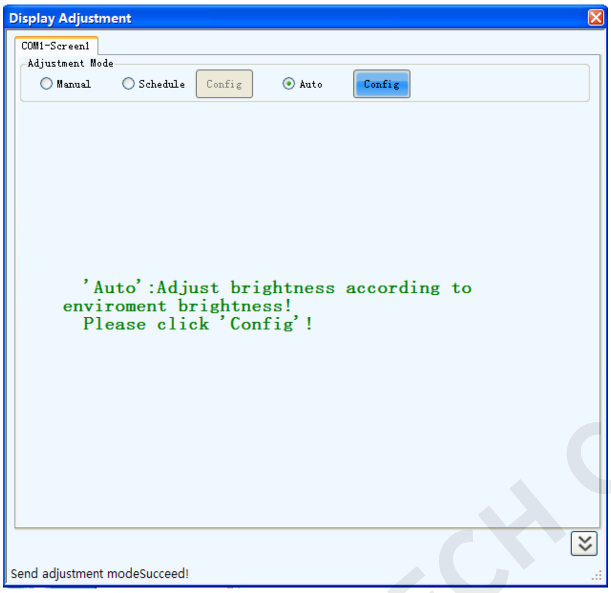
Time	Color Temperature	Gamma Value
10:00		2.8
9:00		2.8

Edit Schedual
Start 09:00
☐ Color Temperatur
Brightness 10 %
☑ Adjust Gamma
Gamma
● Fixed Value 2.8
○ Custom

Fig. 7-30 the Config Schedule File page

7.2.3 Auto Adjustment

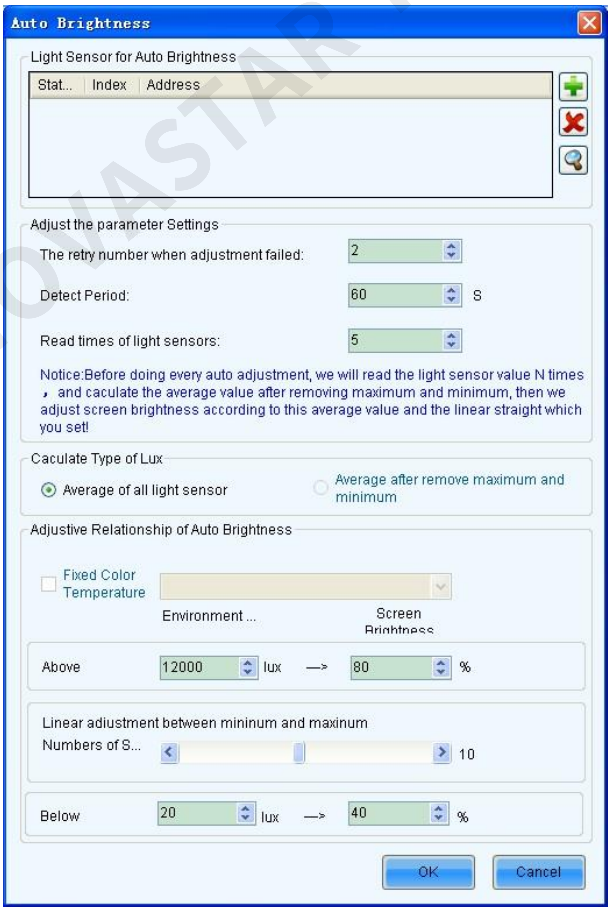
Select Select **Schedule** in the **Adjustment Mode** panel to open auto adjustment page. Then click **Config** button;


Display Adjustment
COM1-Screen1
Adjustment Mode
○ Manual
○ Schedule
Config
● Auto
Config

'Auto':Adjust brightness according to enviroment brightness!
Please click 'Config'!

Send adjustment modeSucceed!

Fig. 7-31 Auto Adjustment page


Auto Brightness
Light Sensor for Auto Brightness
Stat...
Index
Address
Adjust the parameter Settings
Caculate Type of Lux
Adjustive Relationship of Auto Brightness
Environment ...
Screen Brightness
OK
Cancel

The retry number when adjustment failed: 2

Detect Period: 60 S

Read times of light sensors: 5

Notice:Before doing every auto adjustment, we will read the light sensor value N times, and caculate the average value after removing maximum and minimum, then we adjust screen brightness according to this average value and the linear straight which you set!

● Average of all light sensor ○ Average after remove maximum and minimum

☐ Fixed Color Temperature

Above 12000 lux —> 80 %

Linear adjustment between mininum and maxinum

Numbers of S... 10

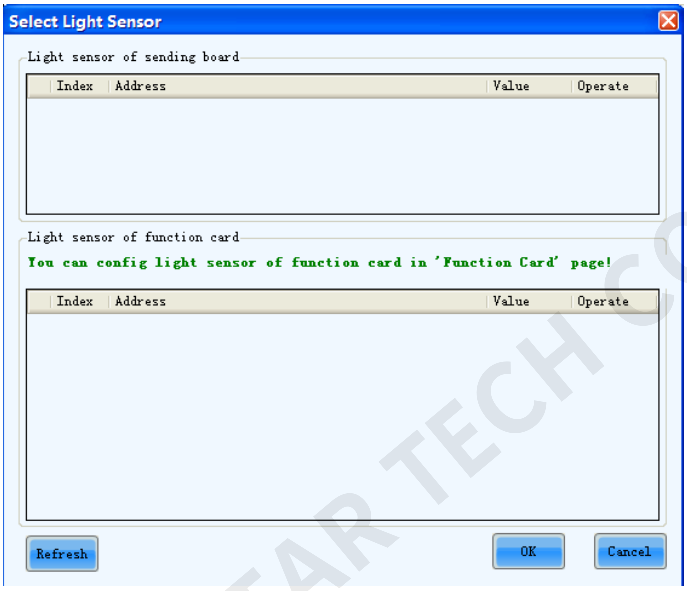
Below 20 lux —> 40 %

Fig. 7-32 the the Auto Adjustment settings

The LED display control system uses light sensors to get the environment brightness.

Add light sensor

Click + button in Fig. 7-32 and NovaLCT-Pluto will automatically detect light sensors that are connected to asynchronous cards and add them to the lightness sensor list, as shown in the upper light sensor list in Fig. 7-33.


Select Light Sensor
Light sensor of sending board
Index
Address
Value
Operate
Light sensor of function card
Index
Address
Value
Operate
Refresh
OK
Cancel

You can config light sensor of function card in 'Function Card' page!

Fig. 7-33 light sensor list page

The retry number when adjustment failed

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

Detect Period

the time period the light sensors measure the environment brightness.

Read times of light sensors

the times that NovaLCT-Mars reads the measurement results of the light sensors.

Auto brightness time interval

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.

Calculate Type of Lux

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

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

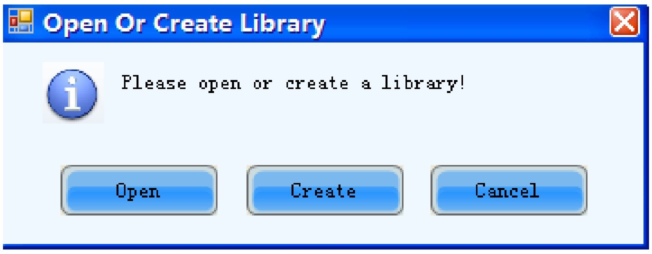
Thresholds need to be set for automatic brightness adjustment. When the environment brightness is higher than the high side threshold, a high brightness level will be set for the screen, for example 100%. And while the environment brightness is lower than the low side threshold, a low brightness level 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.

☞	1. The information of the multifunction card light sensor list is from the multifunction card configuration settings. 2. NovaLCT-Pluto first generates the environment brightness value from measurement results of all available light sensors according to certain calculating algorithm. And then NovaLCT-Pluto uses the generated environment brightness to adjust the LED display brightness according to the parameter settings, such as brightness thresholds, segment numbers.

7.3 Cabinet Database

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

1) Click **Tool** -> **Cabinet Database** to open the library management page. If it is the first time to open the page, the dialog as shown in Fig. 7-34will appear for open or create a library:


Open Or Create Library
Open
Create
Cancel

Please open or create a library!

Fig. 7-34 the dialog for opening or creating a library

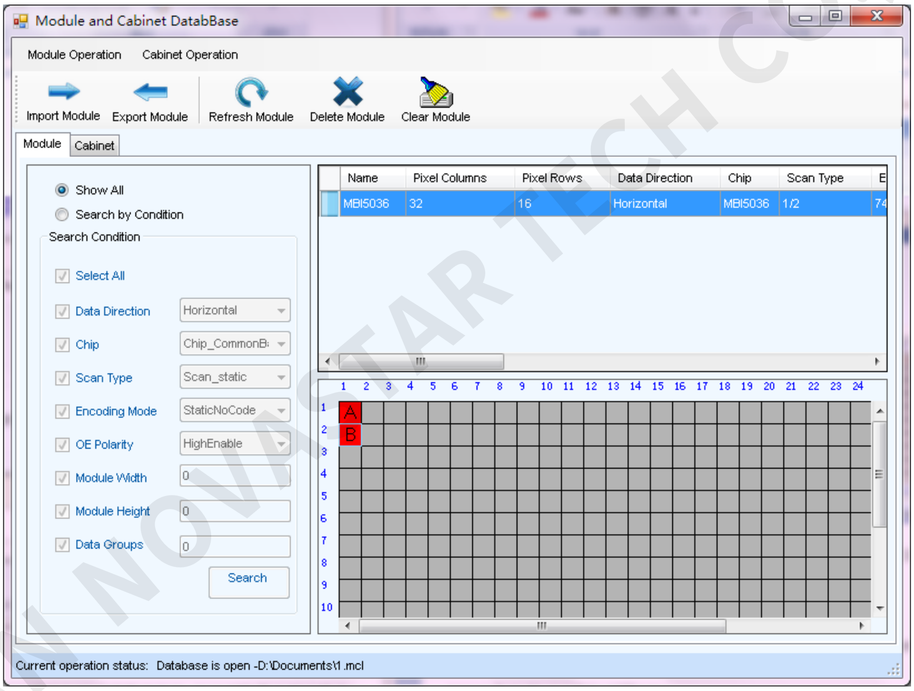
Open

Click this button to open an existing library.

Create

Click this button to create a new library.

2) Module Management:


Module and Cabinet DatabBase
Module Operation
Cabinet Operation
Import Module
Export Module
Refresh Module
Delete Module
Clear Module
Module
Cabinet
Search

● Show All
○ Search by Condition

Search Condition

☑ Select All
☑ Data Direction: Horizontal
☑ Chip: Chip_CommonBi
☑ Scan Type: Scan_static
☑ Encoding Mode: StaticNoCode
☑ OE Polarity: HighEnable
☑ Module Width: 0
☑ Module Height: 0
☑ Data Groups: 0

Name	Pixel Columns	Pixel Rows	Data Direction	Chip	Scan Type	E
MBI5036	32	16	Horizontal	MBI5036	1/2	74

Current operation status: Database is open -D:\Documents\1.mcl

Fig. 7-35 Module management page

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.

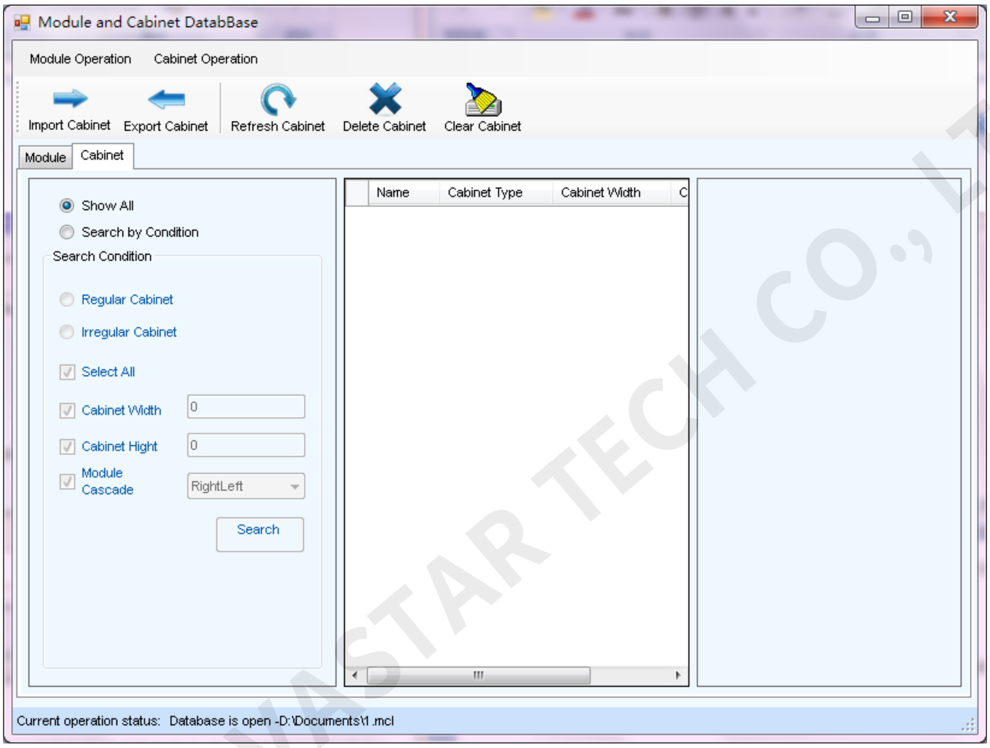
Show All

Select this option to request NovaLCT-Pluto 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.

3) Cabinet Management:


Module and Cabinet DatabBase
Module Operation
Cabinet Operation
Import Cabinet
Export Cabinet
Refresh Cabinet
Delete Cabinet
Clear Cabinet
Module
Cabinet
Name
Cabinet Type
Cabinet Width
Search

● Show All
○ Search by Condition
Search Condition
○ Regular Cabinet
○ Irregular Cabinet
☑ Select All
☑ Cabinet Width 0
☑ Cabinet Hight 0
☑ Module Cascade RightLeft

Current operation status: Database is open -D:\Documents\1.mcl

Fig. 7-36 Cabinet management page

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

Select this option to shown the configurations of the cabinets that meet the requirements set in the Search Condition panel in the list.

7.4 Display Control

Click **Display Control** button from the toolbar or select **Tools**->**Display Control** from the main menu of the NovaLCT-Pluto application main interface to open the **Screen Control** page as shown below in Fig. 7-37:

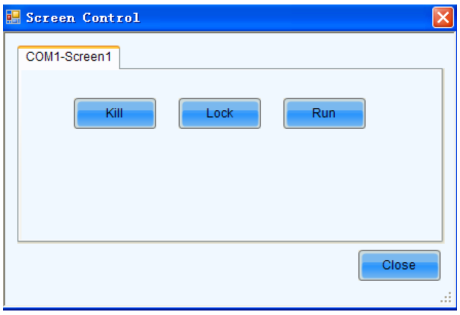


Fig. 7-37 the Screen Control page

Kill

Show nothing on the LED display.

Lock

Always show the current image frame of the LED display.

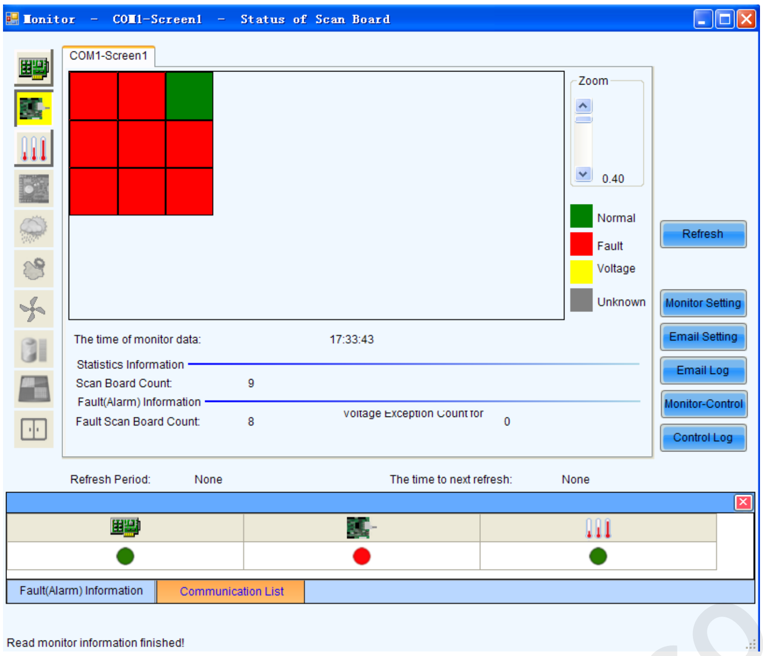
Run

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

7.5 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 viewed here.


Monitor - COM1-Screen1 - Status of Scan Board
COM1-Screen1
Zoom
0.40
🟩 Normal
🟥 Fault
🟨 Voltage
⬛ Unknown
Refresh
Monitor Setting
Email Setting
Email Log
Monitor-Control
Control Log
Fault(Alarm) Information
Communication List

The time of monitor data: 17:33:43

Statistics Information

Scan Board Count: 9

Fault(Alarm) Information

Fault Scan Board Count: 8

Voltage Exception Count for 0

Refresh Period: None

The time to next refresh: None

Read monitor information finished!

Fig. 7-38 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-Pluto monitoring subsystem.

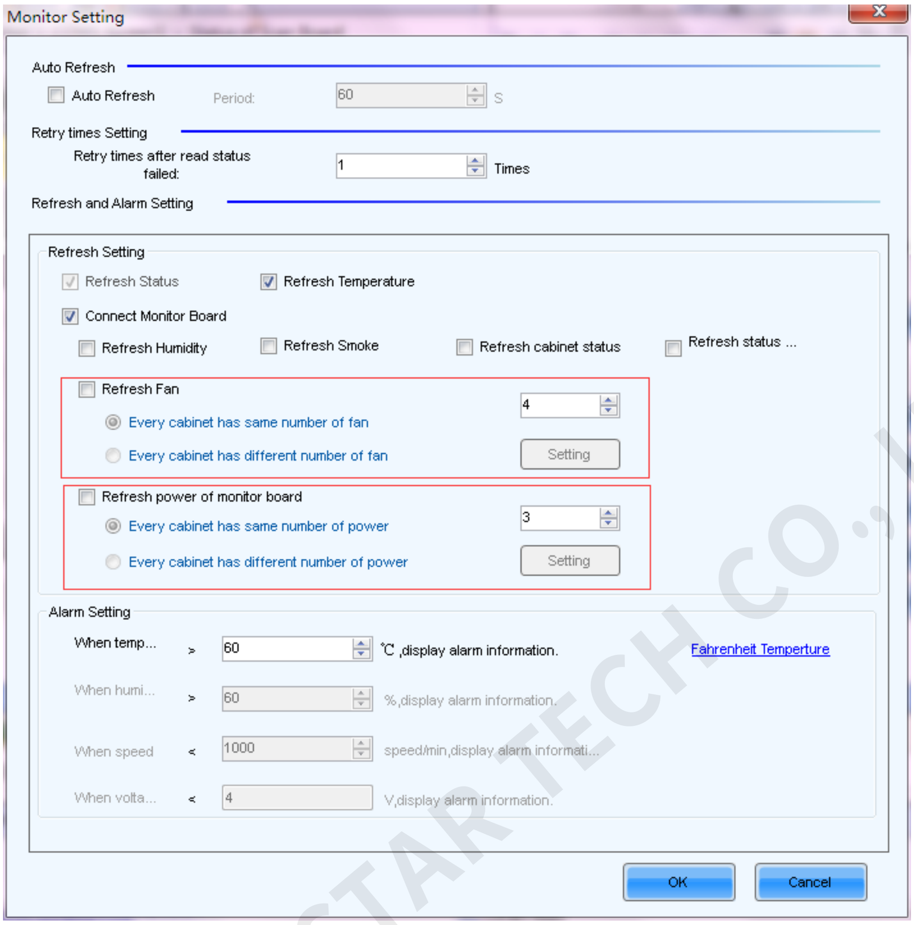
Monitor-Control

Configure the temperature and smoke monitoring control program.

Control Log

Check control scheme acting result.

7.5.1 Monitor Setting



Monitor Setting

Auto Refresh

☐ Auto Refresh Period: 60 S

Retry times Setting

Retry times after read status failed: 1 Times

Refresh and Alarm Setting

Refresh Setting

☑ Refresh Status ☑ Refresh Temperature

☑ Connect Monitor Board

☐ Refresh Humidity ☐ Refresh Smoke ☐ Refresh cabinet status ☐ Refresh status ...

☐ Refresh Fan

● Every cabinet has same number of fan 4

○ Every cabinet has different number of fan

☐ Refresh power of monitor board

● Every cabinet has same number of power 3

○ Every cabinet has different number of power

Alarm Setting

When temp... > 60 ℃ ,display alarm information.

When humi... > 60 %,display alarm information.

When speed < 1000 speed/min,display alarm informati...

When volta... < 4 V,display alarm information.

Fig. 7-39 Monitor setting page

Auto Refresh

If this option is check, NovaLCT-Pluto 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-Pluto 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 scan boards. If this option is selected, the working status of the scan boards 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 scan boards will be under monitoring.

Connect Monitor Board

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

Refresh Humidity

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

Refresh Smoke

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

Refresh cabinet status

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

Refresh status of Cabinet-Door

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

Refresh Fan

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

Every cabinet has same number of fan

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.

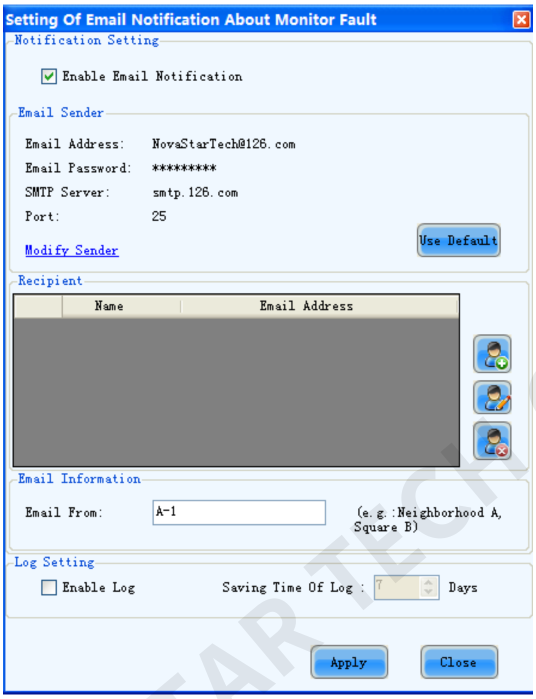
Every cabinet has different number of power

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.

7.5.2 Email Notification Setting

Operating steps:

1) Click **Email Settings** button in the Monitor Page of Fig. 7-38 to enter the email notification setting page shown as below:


Setting Of Email Notification About Monitor Fault
Notification Setting
Email Sender
Use Default
Modify Sender
Recipient
Name
Email Address
Email Information
Log Setting
Apply
Close

☑ Enable Email Notification

Email Address: NovaStarTech@126.com
Email Password: *********
SMTP Server: smtp.126.com
Port: 25

Email From: A-1 (e.g.:Neighborhood A, Square B)

☐ Enable Log
Saving Time Of Log: 7 Days

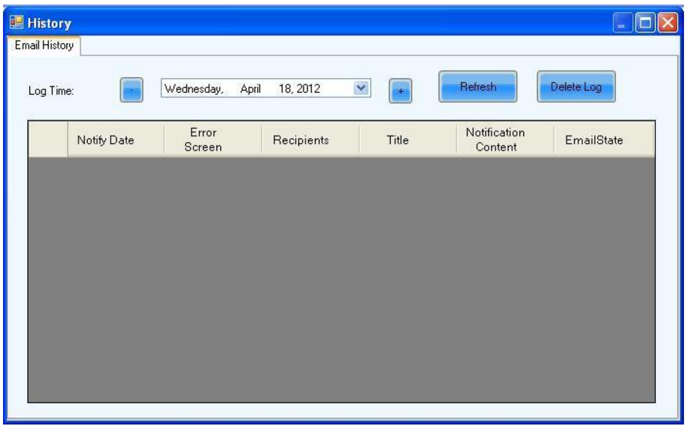
Fig. 7-40 Email notification setting page

2) To enable email notification, **email sender**, **recipient** and **email info** need to be set, click **Apply** button after setting.

7.5.3 Notification Email Log

If **email notification** is enabled in the email notification setting page of Fig. 7-40, user can view notification email log by clicking **Email log** in the Monitor Page of Fig. 7-41 as show below:

User can search notification email log by date or delete overdue logs manually.



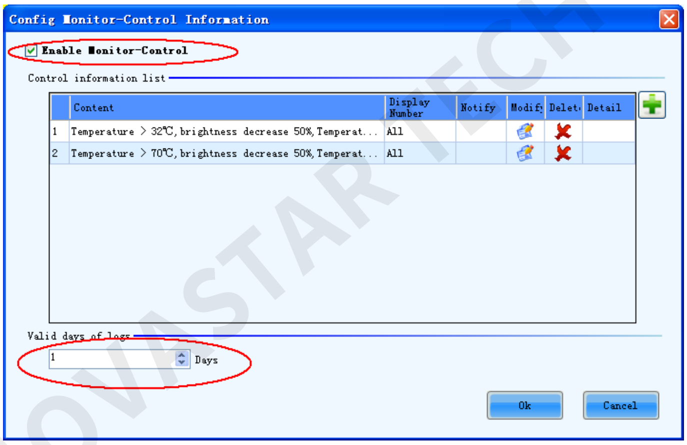
Log Time: Wednesday, April 18, 2012

	Notify Date	Error Screen	Recipients	Title	Notification Content	EmailState

Fig. 7-41 the History of notification emails

7.5.4 Monitor-Control

7.5.4.1 Configure Control Scheme



☑ Enable Monitor-Control

Control information list

	Content	Display Number	Notify	Modify	Delete	Detail
1	Temperature > 32℃, brightness decrease 50%, Temperat...	All				
2	Temperature > 70℃, brightness decrease 50%, Temperat...	All				

Valid days of logs

1 Days

Fig. 7-42 Configuration Of Monitor-Control

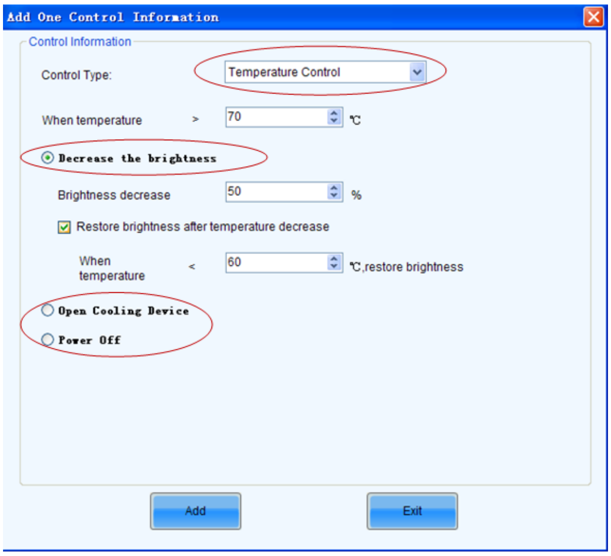
Enable Monitor-Control

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.7-42. As it show in Fig. 7-43 is to add one temperature control information, as it show in Fig. 7-44 is to add one smoke control information.


Add One Control Information
Control Information
Add
Exit

Control Type: Temperature Control

When temperature > 70 ℃

● Decrease the brightness

Brightness decrease 50 %

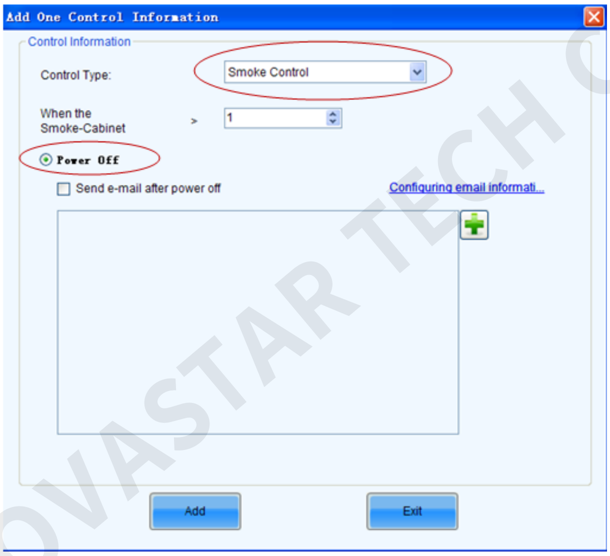
☑ Restore brightness after temperature decrease

When temperature < 60 ℃,restore brightness

○ Open Cooling Device

○ Power Off

Fig. 7-43 Temperature Control Information


Add One Control Information
Control Information
Configuring email informati...
Add
Exit

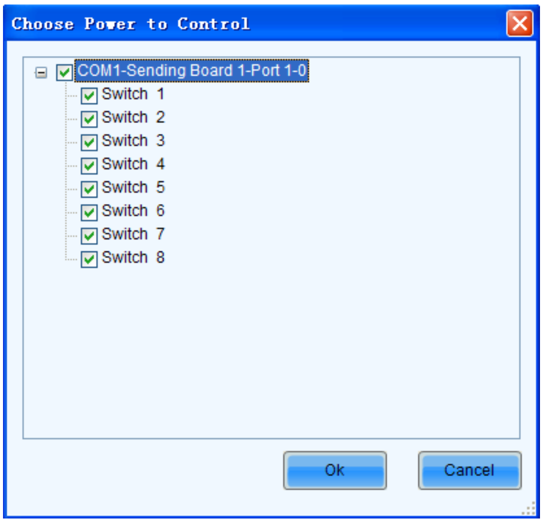
Control Type: Smoke Control

When the Smoke-Cabinet > 1

● Power Off

☐ Send e-mail after power off

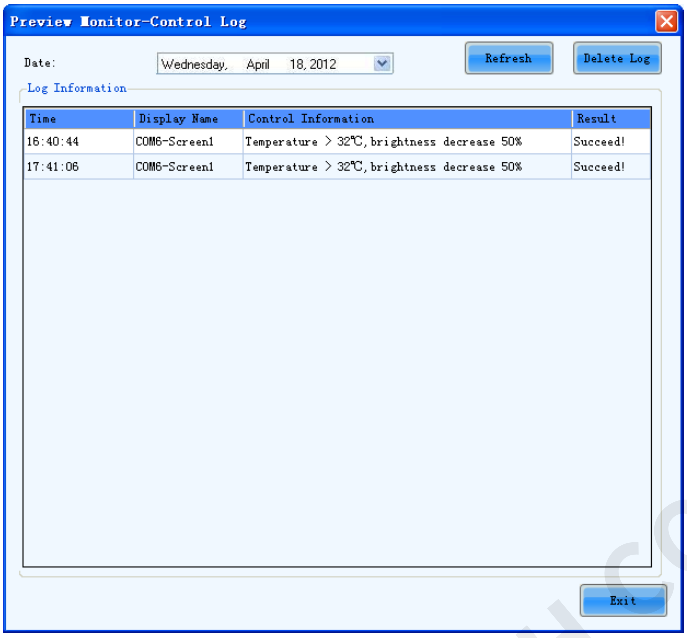
Fig. 7-44 Smoke Control Information


Choose Power to Control
Ok
Cancel

- ☑ COM1-Sending Board 1-Port 1-0
  - ☑ Switch 1
  - ☑ Switch 2
  - ☑ Switch 3
  - ☑ Switch 4
  - ☑ Switch 5
  - ☑ Switch 6
  - ☑ Switch 7
  - ☑ Switch 8

Fig. 7-45 Select The Controlled Power

7.5.4.2 Monitor-Control Log


Preview Monitor-Control Log
Refresh
Delete Log
Log Information
Exit

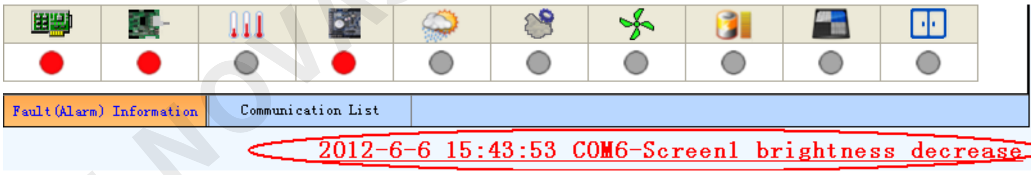
Date: Wednesday, April 18, 2012

Time	Display Name	Control Information	Result
16:40:44	COM6-Screen1	Temperature > 32℃, brightness decrease 50%	Succeed!
17:41:06	COM6-Screen1	Temperature > 32℃, brightness decrease 50%	Succeed!

Fig. 7-46 Monitor-Control Log

7.5.4.3 Recovering Of Monitor-Control

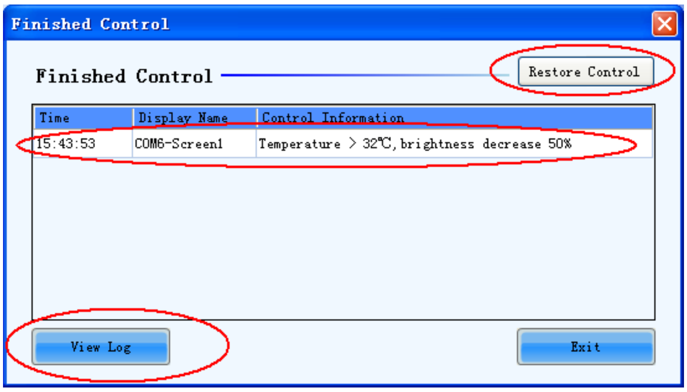
The latest control information will show in the bottom right corner in the main form and the monitor page. As it show in Fig. 7-47 is the information which comes from the last control.


Fault(Alarm) Information
Communication List

2012-6-6 15:43:53 COM6-Screen1 brightness decrease

Fig. 7-47 Control Information In The Monitor Page

Click this link label to view the controlled information list as it show in Fig.7-48.


Finished Control
Finished Control
Restore Control
View Log
Exit

Time	Display Name	Control Information
15:43:53	COM6-Screen1	Temperature > 32℃, brightness decrease 50%

Fig. 7-48 View The Control Information List

Recover Control

If the control scheme is performed(View 7.5.4.1 Configure Control Scheme to configure the control scheme) , and the user can restart monitor-control by clicking this button after dealing with the fault.

View Log

Open the **log**-window and view the stored logs.

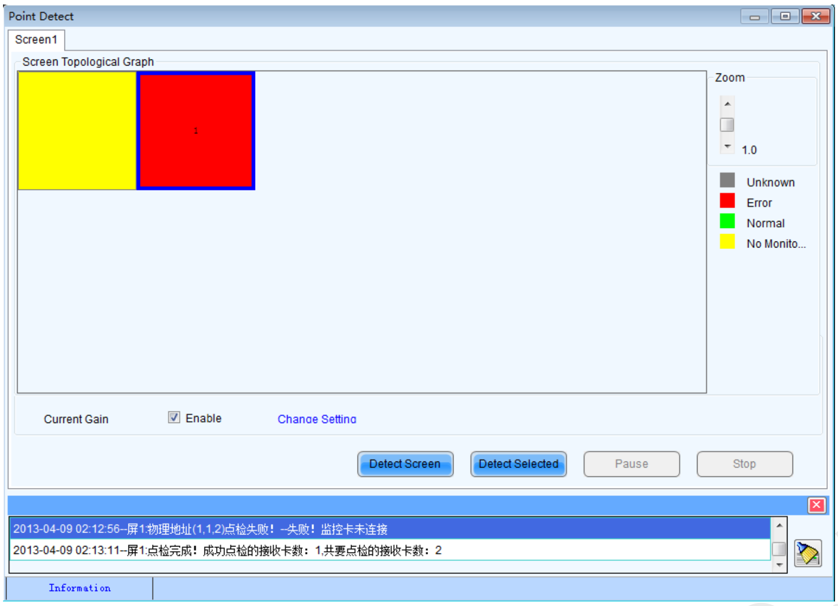
7.6 Check the LED Status

The LED status checking function, also known as point detect, is to check the working status of each LED on a LED display. NovaLCT-Pluto can detect and locate LEDs that are in open circuit or short circuit status.

⚠	1. Point detect is only available for LED displays of which the LED drive chips support LED lights open/short circuit status checking. 2. Drive chips supported by Mars serial LED display control systems and good for point detect at present are MBI5036, MBI5034, MBI5040, DM13H and MBI5030. 3. Monitor boards for Pluto LED display control systems are required for point detect.

Operating steps:

1) Select **Tool** -> **Point Detect** from the NovaLCT-Pluto main menu to open the **Point Detect** page for point detect setting. Shown in Fig. 7-49 is the Point Detect page. As shown in the figure, the LED display under point detecting has a scan boards array of 2 rows and 4 columns. (one scan board corresponds to a cabinet.) And the drive chips used are MBI5036:


Point Detect
Screen1
Screen Topological Graph
1
Zoom
1.0
Unknown
Error
Normal
No Monito...
Current Gain
☑ Enable
Change Setting
Detect Screen
Detect Selected
Pause
Stop
Information

```
2013-04-09 02:12:56--屏1:物理地址(1,1,2)点检失败！--失败！监控卡未连接
2013-04-09 02:13:11--屏1:点检完成！成功点检的接收卡数：1,共要点检的接收卡数：2
```

Fig. 7-49 the Point Detect page

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 scan boards.

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

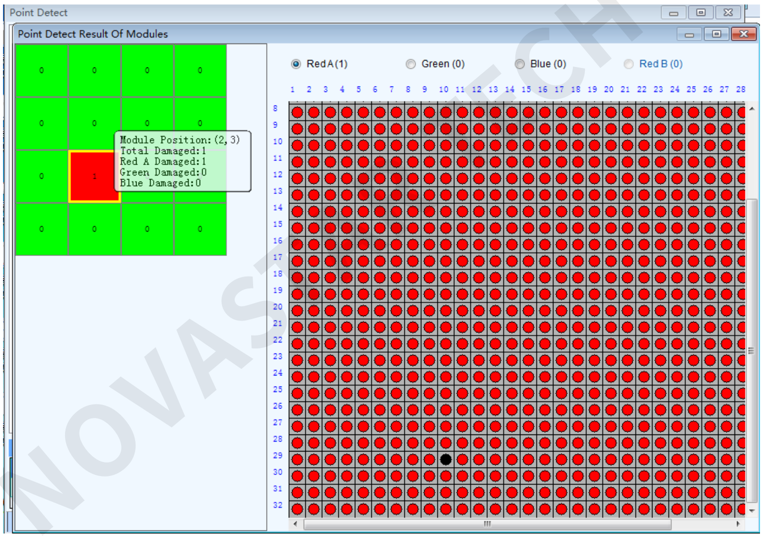
The information of the ongoing point detect operation will be shown in this panel.

Colors of the LED display sketch map

- **Gray** - the point detect operation result is unknown. It may be due to hardware communication failure or scan board 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 scan board (cabinet) does not connected with a monitor card.

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

2) In Fig. 7-42 click on the cabinet in the sketch map to open the **Point Detect Result of Modules** page for details about LED status information. Shown in Fig. 7-50 is the **Point Detect Result of Modules** page showing the LED status of the red cabinet in Fig. 7-50:



Module Position: (2, 3)
Total Damaged: 1
Red A Damaged: 1
Green Damaged: 0
Blue Damaged: 0

Fig. 7-50 the Point Detect Result of Modules

Shown on the left of Fig. 7-50 is the module array of the cabinet and on the right the pixel array of the selected module in the module array.

Red A

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

Green

This is the number of the error green LEDs of the selected module. Select this item to view the locations of the error LEDs in the pixel array sketch.

Blue

This is the number of the error blue LEDs of the selected module. Select this item to view the locations of the error LEDs in the pixel array sketch.

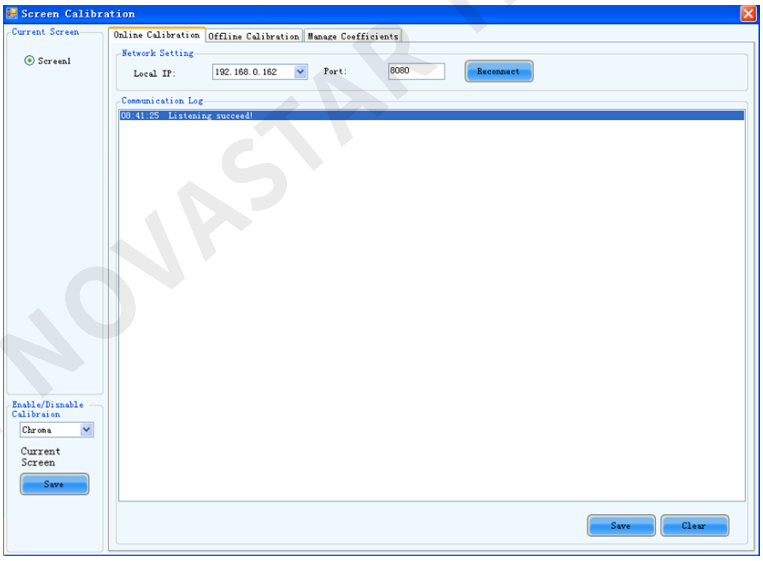
Red B

This is the number of the error virtual red LEDs of the selected module. Select this item to view the locations of the error LEDs in the pixel array sketch.

7.7 Brightness/Color Calibration

7.7.1 Online Calibration

In online calibration, NovaCLB connects with NovaLCT-Pluto through network. Data and instructions for LED display calibration are exchanged through the network. Shown in Fig. 7-51 is the online calibration page.



Screen Calibration
Current Screen
Screen1
Online Calibration
Offline Calibration
Manage Coefficients
Network Setting
Reconnect
Communication Log
Enable/Disnable Calibraion
Current Screen
Save
Save
Clear

Local IP: 192.168.0.162
Port: 8080
Enable/Disnable Calibraion: Chroma

```
08:41:25  Listening succeed!
```

Fig. 7-51 Online calibration page

Enable/Disnable Calibraion： Disnable、Chroma or。

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-Pluto listens to. It is actually an IP of the computer on which NovaLCT-Pluto is running.

Port

This is the port that NovaLCT-Pluto listens to.

Reconnect

Click this button to terminate the current listening process and start a new listen process using the settings of Local IP and Port.

Communication Log

Records of the communication between NovaCLB and NovaLCT-Pluto 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.

7.7.2 Manage Coefficients

This page is to adjust the calibration coefficients for better calibration performance. Shown in Fig. 7-52 is the **Manage Coefficients** page.

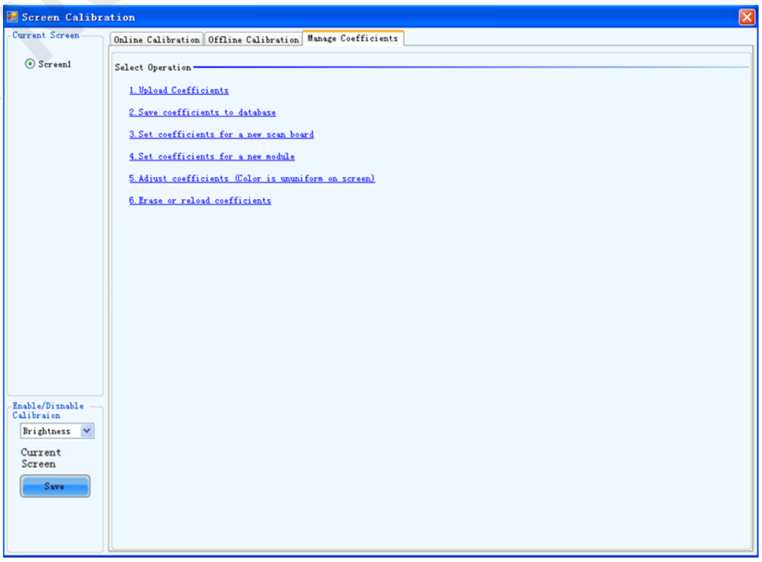

Screen Calibration
Current Screen
○ Screen1
Online Calibration
Offline Calibration
Manage Coefficients
Select Operation
1.Upload Coefficients
2.Save coefficients to database
3.Set coefficients for a new scan board
4.Set coefficients for a new module
5.Adjust coefficients (Color is ununiform on screen)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

Fig. 7-52 Manage Coefficients page

Upload Coefficients

Upload a calibration coefficients database to the LED display.

Save coefficients to database

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

Set coefficients for a new scan board

This option is to set the calibration coefficients for a newly placed scan board 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 Coefficients

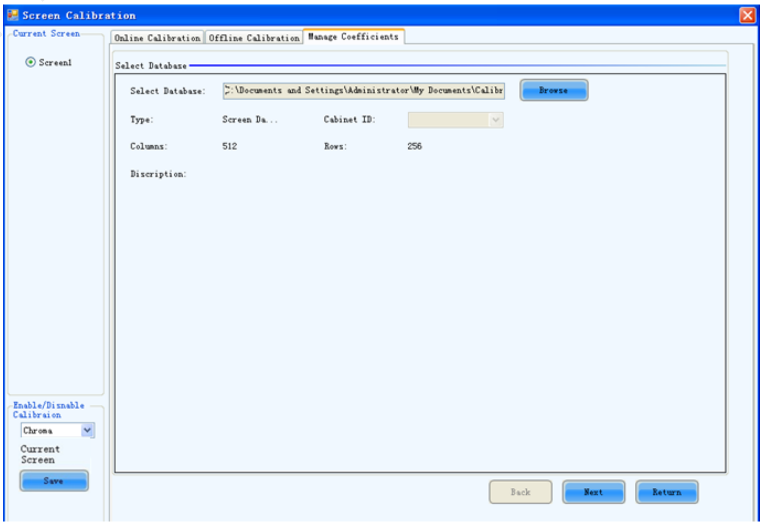
This option is to erase the calibration coefficients of the selected LED display.

7.7.2.1 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.

Operating steps:

1) Browse directory to select calibration coefficients database;


Screen Calibration
Current Screen
Screen1
Online Calibration
Offline Calibration
Manage Coefficients
Select Database
Browse
Cabinet ID:
Discription:
Enable/Disnable Calibraion
Chroma
Current Screen
Save
Back
Next
Return

Select Database: :\Documents and Settings\Administrator\My Documents\Calibr

Type: Screen Da...

Columns: 512

Rows: 256

Fig. 7-53 upload coefficients step 1

Browse

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

Type

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

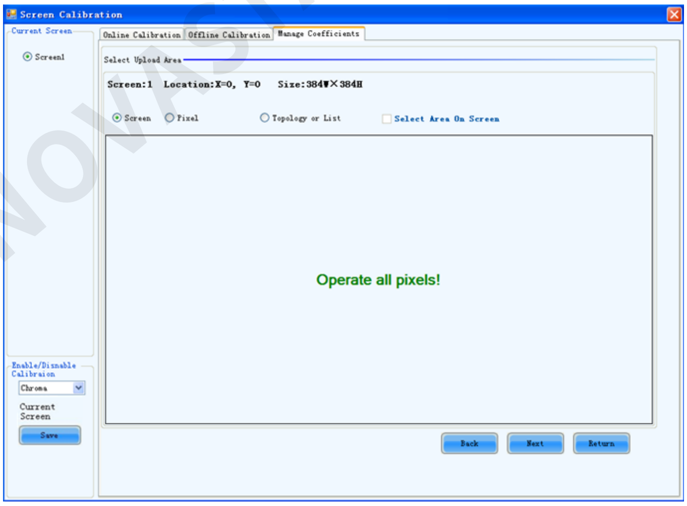
This is the column number of the calibration coefficient array of the selected database.

Rows

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

2) Click **Next** button to choose upload area, there are three options, Screen, Pixel, Topology or List:

   a) **Screen**


Screen Calibration
Current Screen
Screen1
Online Calibration
Offline Calibration
Manage Coefficients
Select Upload Area
Pixel
Topology or List
☐ Select Area On Screen
Enable/Disnable Calibraion
Chroma
Current Screen
Save
Back
Next
Return

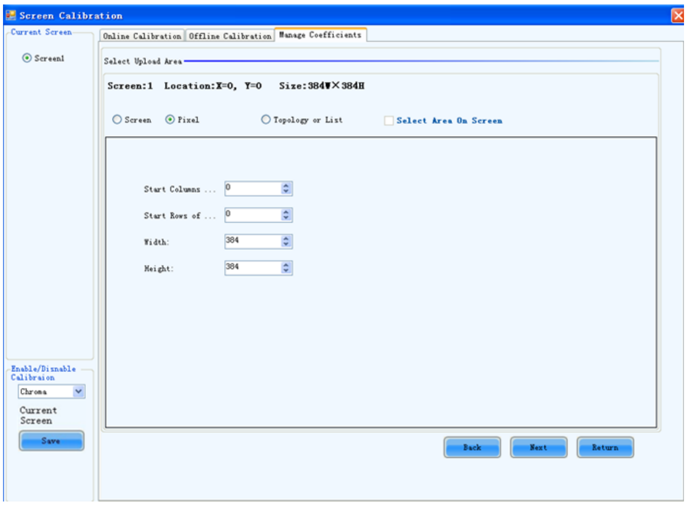
Screen:1 Location:X=0, Y=0 Size:384W×384H

● Screen

Operate all pixels!

Fig. 7-54 upload coefficients step 2-upload to screen

   b) **Pixel**


Screen Calibration
Current Screen
Online Calibration
Offline Calibration
Manage Coefficients
Enable/Disnable Calibraion
Current Screen
Save
Back
Next
Return

● Screen1

Select Upload Area

Screen:1 Location:X=0, Y=0 Size:384W×384H

○ Screen ● Pixel ○ Topology or List ☐ Select Area On Screen

Start Columns ... 0

Start Rows of ... 0

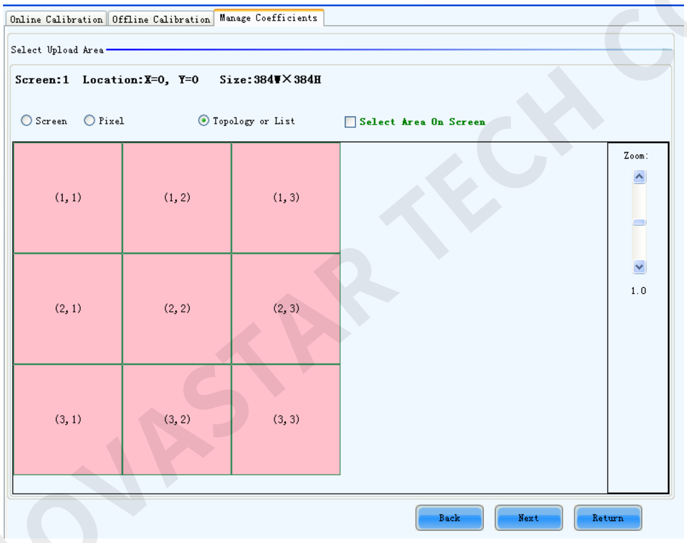
Width: 384

Height: 384

Chroma

Fig. 7-55 upload coefficients step 2-upload to specific pixel area

c) **Topology or List**


Online Calibration
Offline Calibration
Manage Coefficients
(1, 1)
(1, 2)
(1, 3)
(2, 1)
(2, 2)
(2, 3)
(3, 1)
(3, 2)
(3, 3)
Zoom:
1.0
Back
Next
Return

Select Upload Area

Screen:1 Location:X=0, Y=0 Size:384W×384H

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

Fig. 7-56 upload coefficients step 2-upload by 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 shown is the cabinet list.)

Zoom

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

3) Choose **Fast upload** or **Stable upload**, then press **Upload** button:

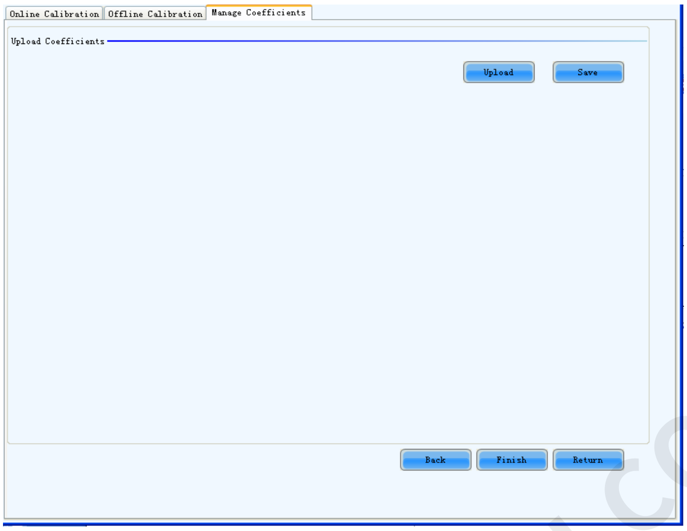

Online Calibration
Offline Calibration
Manage Coefficients
Upload Coefficients
Upload
Save
Back
Finish
Return

Fig. 7-57 upload coefficients step 3

Upload

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

Save

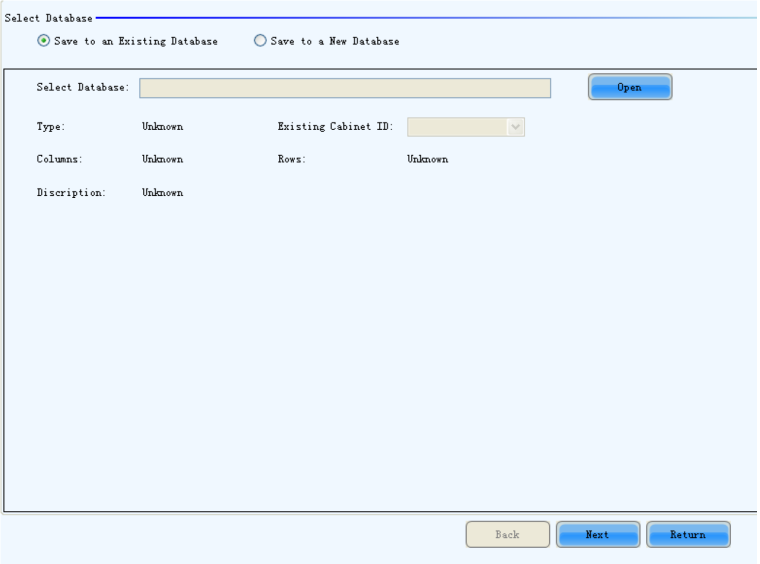
Save the selected calibration coefficients to hardware (FLASH). The saved data won’ t be lost even the system is powered off.

7.7.2.2 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.

Operating steps:

1) The calibration coefficients read back can be saved to an existing database or a new database. Shown in Fig. 7-58 and Fig. 7-59 are the pages for saving coefficients to an existing database and a new database respectively.



Select Database

● Save to an Existing Database ○ Save to a New Database

Select Database:

Type: Unknown

Existing Cabinet ID:

Columns: Unknown

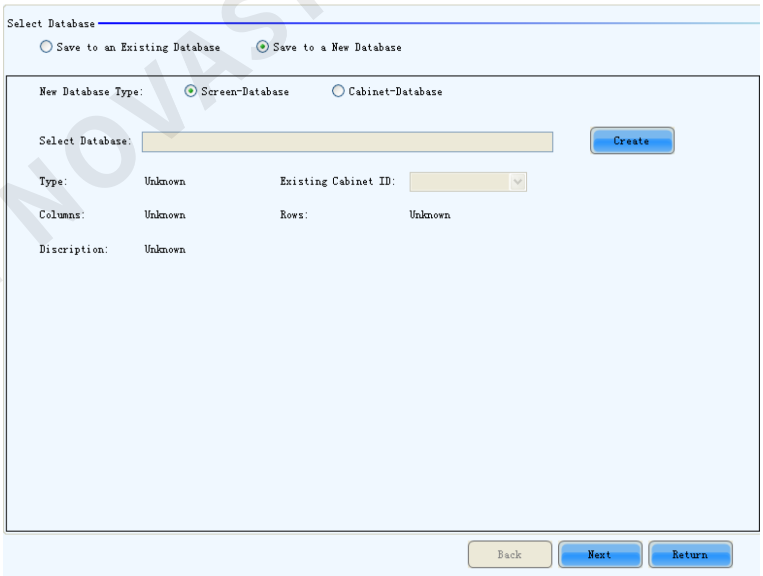
Rows: Unknown

Discription: Unknown

Fig. 7-58 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.



Select Database

○ Save to an Existing Database ● Save to a New Database

New Database Type: ● Screen-Database ○ Cabinet-Database

Select Database:

Type: Unknown

Existing Cabinet ID:

Columns: Unknown

Rows: Unknown

Discription: Unknown

Fig. 7-59 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

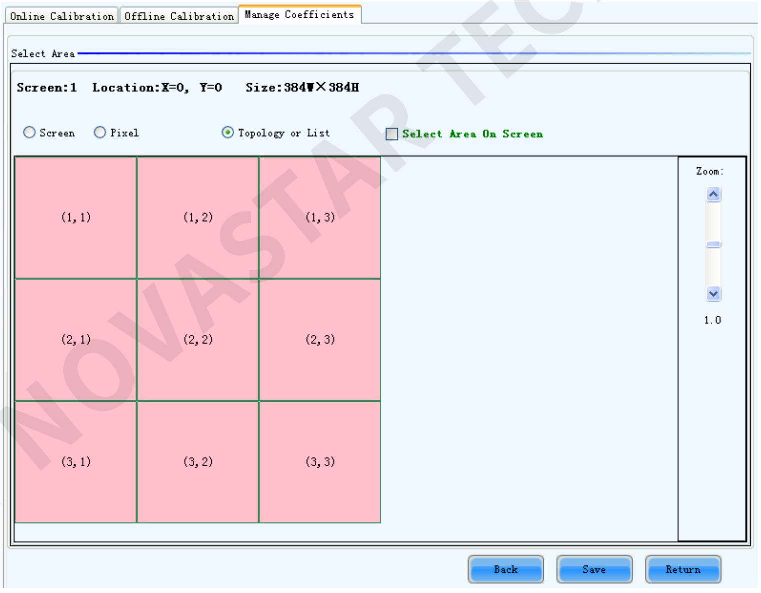
Select this option if it is to save the calibration coefficients to a new cabinet database.

Create

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

☞	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.

2) Choose upload area, there are three options, Screen, Pixel, Topology or List.



Screen:1 Location:X=0, Y=0 Size:384W×384H

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

(1, 1)	(1, 2)	(1, 3)
(2, 1)	(2, 2)	(2, 3)
(3, 1)	(3, 2)	(3, 3)

Fig. 7-60 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.

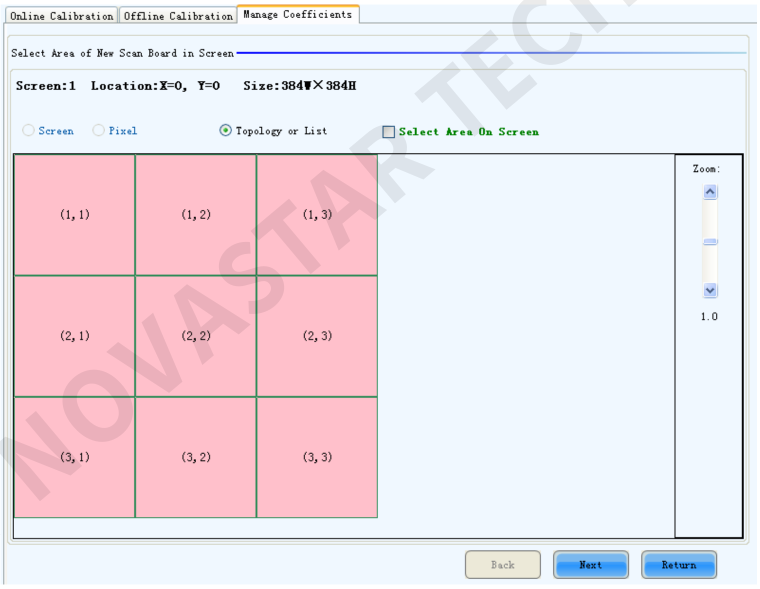
Save

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.

7.7.2.3 Set coefficients for a new scan board

Operating steps:

1) Specify the LED display area that the new receiving card (scan board) drives.

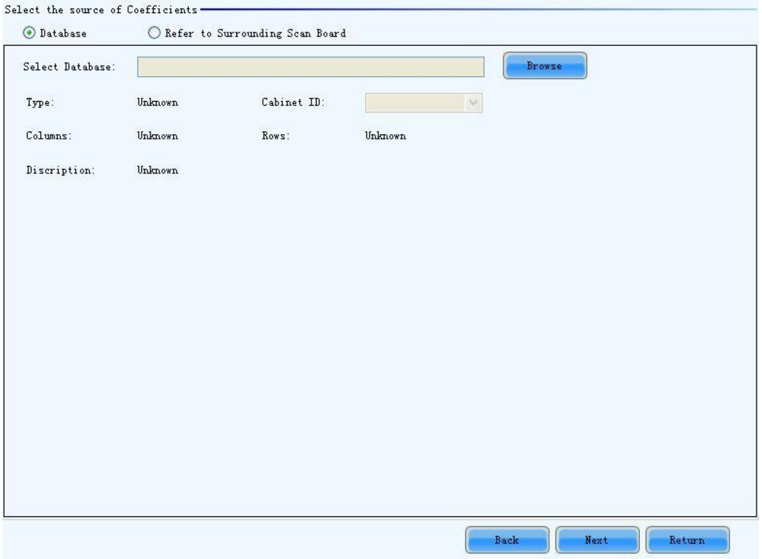

Online Calibration
Offline Calibration
Manage Coefficients
Select Area of New Scan Board in Screen
(1, 1)
(1, 2)
(1, 3)
(2, 1)
(2, 2)
(2, 3)
(3, 1)
(3, 2)
(3, 3)
Zoom:
1.0
Back
Next
Return

Screen:1 Location:X=0, Y=0 Size:384W×384H

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

Fig. 7-61 Page for specifying the working area of the new scan board

2) Select the calibration coefficient source. The coefficients could be from a database (the **Database** option) or generated according to those of the surrounding receiving cards (the **Refer to Surrounding Scan Board** option).



Select the source of Coefficients

● Database ○ Refer to Surrounding Scan Board

Select Database:

Type: Unknown

Cabinet ID:

Columns: Unknown

Rows: Unknown

Discription: Unknown

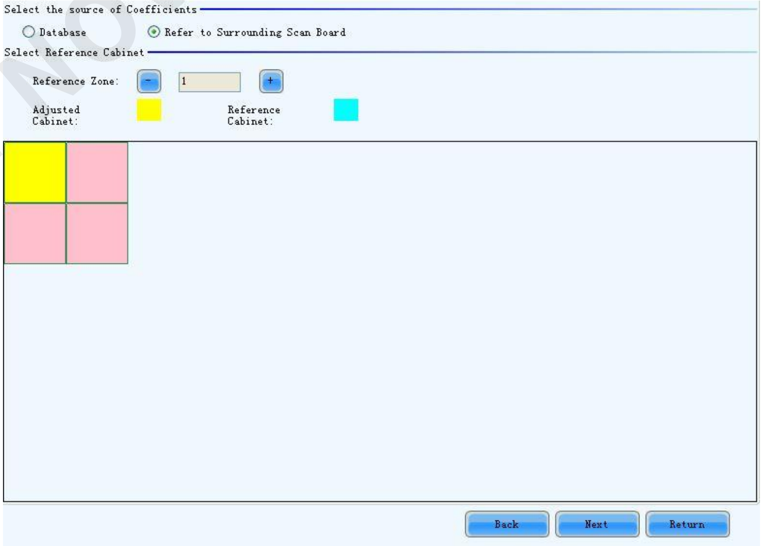
Fig. 7-62 Page for getting calibration coefficients from a database

Browse

Click this button to select the database that the calibration coefficients for the new scan board 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 Scan Board

Select Reference Cabinet

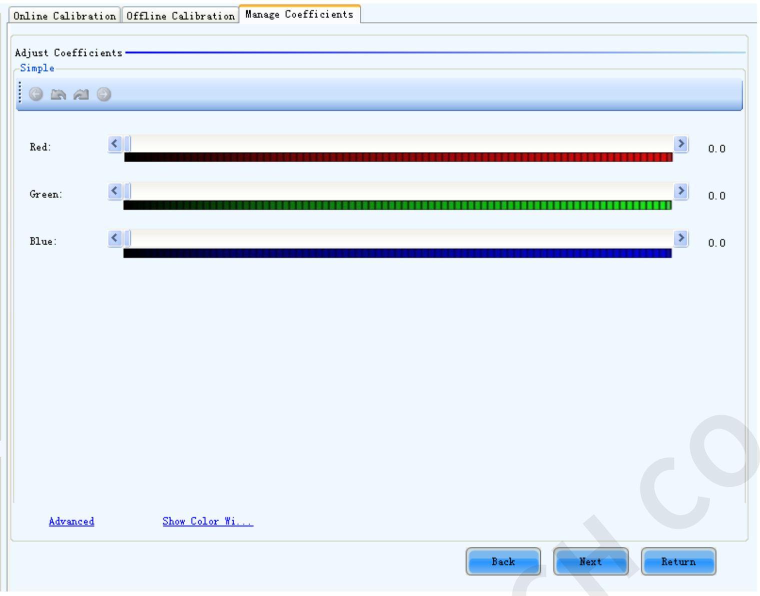
Reference Zone: 1

Adjusted Cabinet: 🟨

Reference Cabinet: 🟦

Fig. 7-63 Page for generating coefficients for the new scan board according to those of its surrounding scan boards

3) If the calibration coefficients from Step 2 are not satisfying, they can be adjusted. There are two type of adjustment, Simple and Advanced. Shown in Fig. 7-64 and Fig. 7-65 are the pages for Simple and Advanced adjustment respectively.


Online Calibration
Offline Calibration
Manage Coefficients
Adjust Coefficients
Simple
Advanced
Show Color Wi...
Back
Next
Return

Red: 0.0

Green: 0.0

Blue: 0.0

Fig. 7-64 Simple adjustment page

Red

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

Green

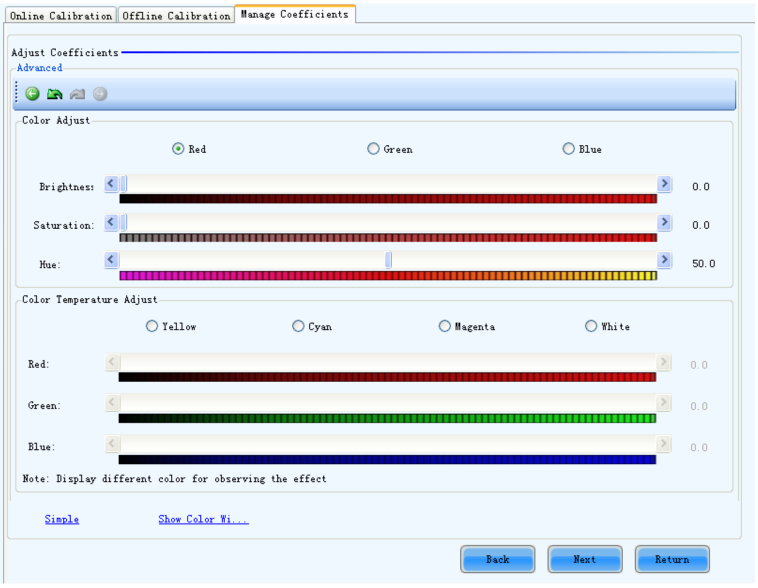
Use the slide bar to adjust the green brightness of the calibration coefficients.

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.


Online Calibration
Offline Calibration
Manage Coefficients
Adjust Coefficients
Advanced
Color Adjust
Red
Green
Blue
Brightness:
0.0
Saturation:
0.0
Hue:
50.0
Color Temperature Adjust
Yellow
Cyan
Magenta
White
Red:
0.0
Green:
0.0
Blue:
0.0
Simple
Show Color Wi...
Back
Next
Return

◉ Red ○ Green ○ Blue

Brightness: 0.0

Saturation: 0.0

Hue: 50.0

Note: Display different color for observing the effect

Fig. 7-65 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 slide bar indicates the color to be shown when adjusting.

1. If the cabinet driven by the new scan board is only different from the surrounding cabinets in brightness, simple adjustment is sufficient.

2. If the cabinet driven by the new scan board is different from the surrounding cabinets in color, adjust the brightness, saturation and hue through the advanced adjustment page for better image quality.

3. Use the test tools in Plug In **Tool - > Test Tool** to require the LED display to show the color that is being adjusted.

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. 7-66 is the page for saving the coefficients to the hardware. Click the Save button to save the coefficients to the hardware.

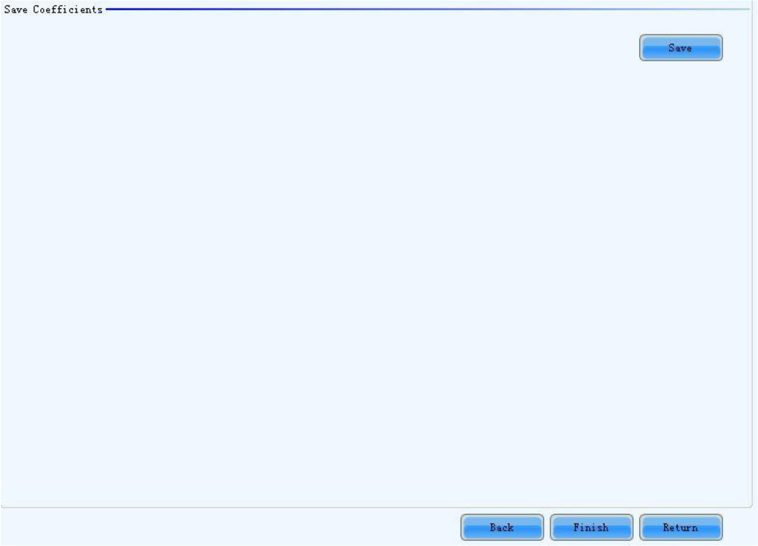
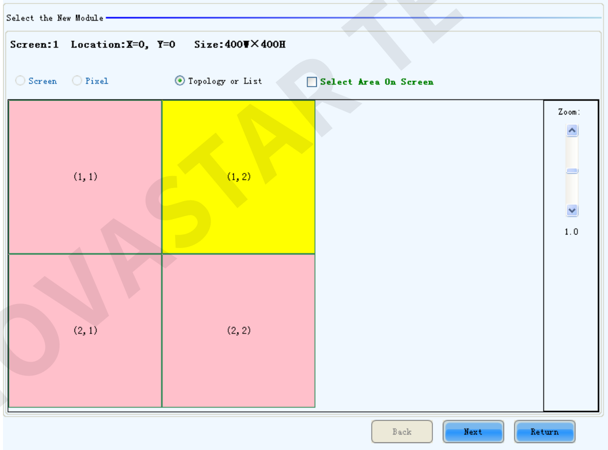

Save Coefficients
Save
Back
Finish
Return

Fig. 7-66 Page for saving calibration coefficients to the hardware

7.7.2.4 Set coefficients for a new module

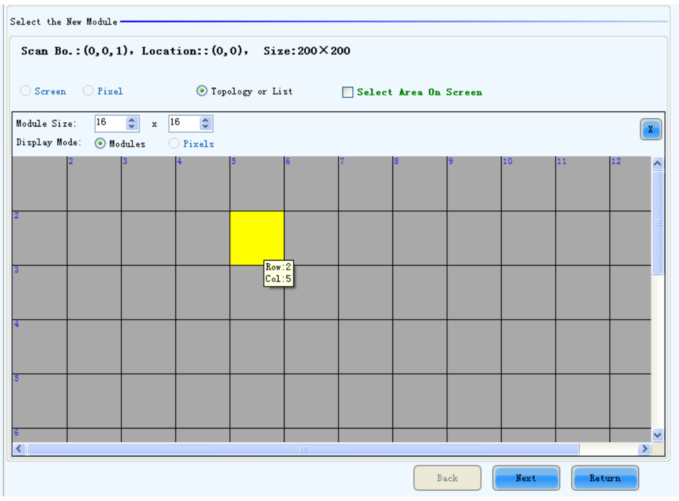
1) Specify the cabinet where the new module locates.


Select the New Module
○ Screen
○ Pixel
● Topology or List
☐ Select Area On Screen
(1, 1)
(1, 2)
(2, 1)
(2, 2)
Zoom:
1.0
Back
Next
Return

Screen:1 Location:X=0, Y=0 Size:400W×400H

Fig. 7-67 Page for specifying the cabinet where the new module locates

2) Double click the selected cabinet to open the page for specifying the new module. Select the new module position in the cabinet.



Select the New Module

Scan Bo.:(0,0,1), Location::(0,0), Size:200×200

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

Module Size: 16 x 16

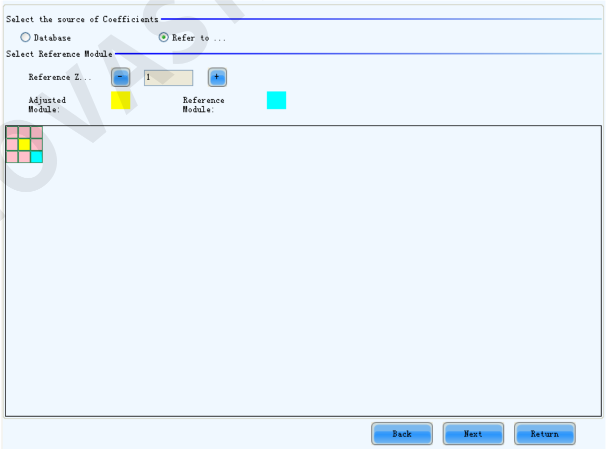
Display Mode: ● Modules ○ Pixels

Fig. 7-68 Page for specifying the new module in the cabinet

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.

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 scan board or the database are not suitable for the new module, just could be used for calibration reference.



Select the source of Coefficients

○ Database ● Refer to ...

Select Reference Module

Reference Z... 1

Fig. 7-69 Page for selecting the calibration coefficients source of new module

4) Adjust the calibration coefficients if the generated coefficients are not satisfying. The adjustment page is similar to that for a new scan board. Please refer to 7.7.2.3 Set coefficients for a new scan board -> step 3) for more details

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 scan board. Please refer to

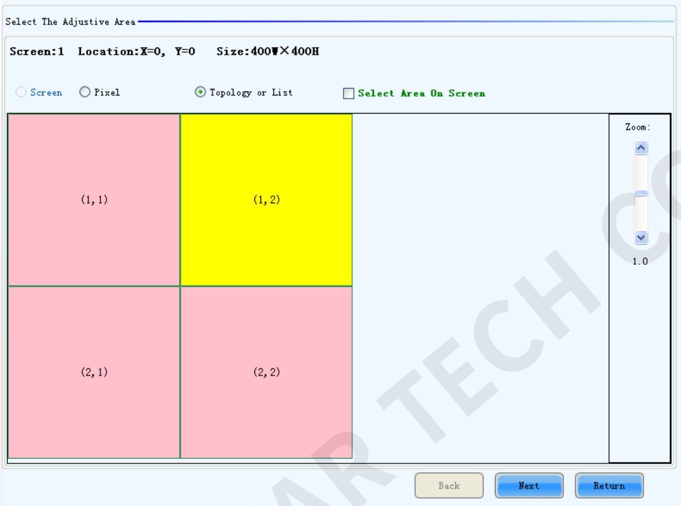
7.7.2.3 Set coefficients for a new scan board -> step 4) for more details.

7.7.2.5 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.

Operating steps:

1) Select the areas to be adjusted.



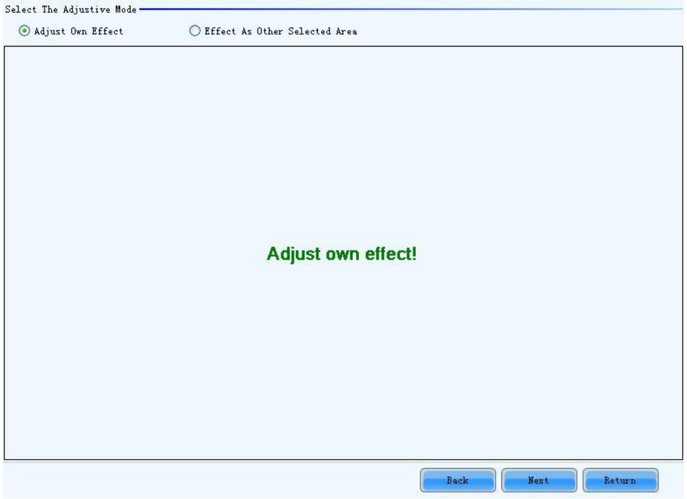
Select The Adjustive Area

Screen:1 Location:X=0, Y=0 Size:400W×400H

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

Fig. 7-70 Page for selecting the area to be adjusted

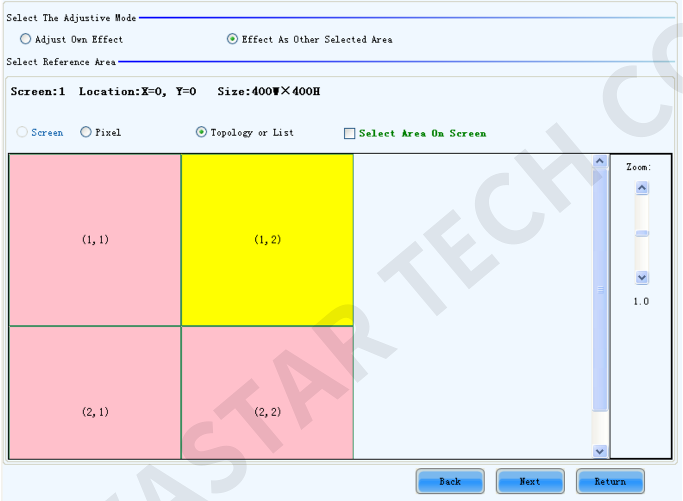
2) Select the adjustment type. If **Adjust Own Effect** option is selected, the color adjustment of selected area is independent to the other areas of the LED display. If **Effect As Other Selected Area** option is selected, the color of the selected area will be adjusted according to the reference area color. The selected area color will look similar to the reference area color after the adjustment operation.



● Adjust Own Effect ○ Effect As Other Selected Area

Adjust own effect!

Fig. 7-71 Page for Adjust Own Effect option



○ Adjust Own Effect ● Effect As Other Selected Area

Screen:1 Location:X=0, Y=0 Size:400W×400H

○ Screen ○ Pixel ● Topology or List ☐ Select Area On Screen

Fig. 7-72 Page for Effect As Other Selected Area

☞	1. If Adjust Own Effect option is selected, NovaLCT-Pluto 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. 2. If Effect As Other Selected Area is selected, NovaLCT-Pluto 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.

3) Adjust the calibration coefficients. This step is similar to that for a new scan board. Please refer to 7.7.2.3 Set coefficients for a new scan board -> step 3) for more details.

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.

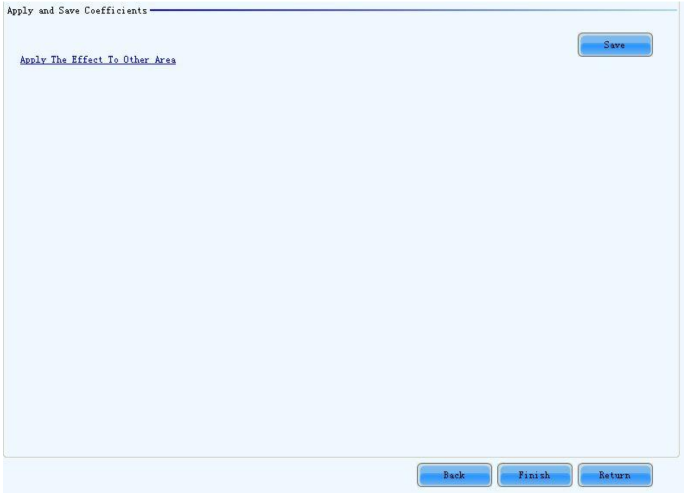
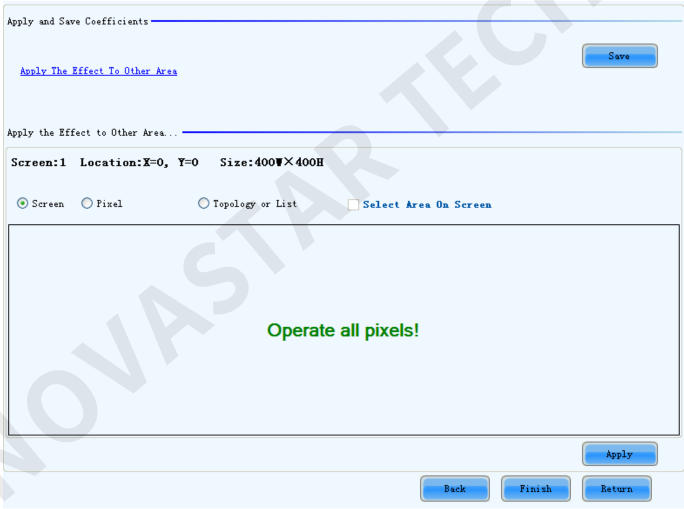

Apply and Save Coefficients
Apply The Effect To Other Area
Save
Back
Finish
Return

Fig. 7-73 Page for the calibration coefficients saving

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 in Fig. 7-73 to open the page for setting.


Apply and Save Coefficients
Apply The Effect To Other Area
Save
Apply the Effect to Other Area...

Screen:1 Location:X=0, Y=0 Size:400W×400H

● Screen ○ Pixel ○ Topology or List ☐ Select Area On Screen

Operate all pixels!

Apply
Back
Finish
Return

Fig. 7-74 Page for Apply The Effect To Other area

Apply

Apply **adjustment** operations to the selected area.

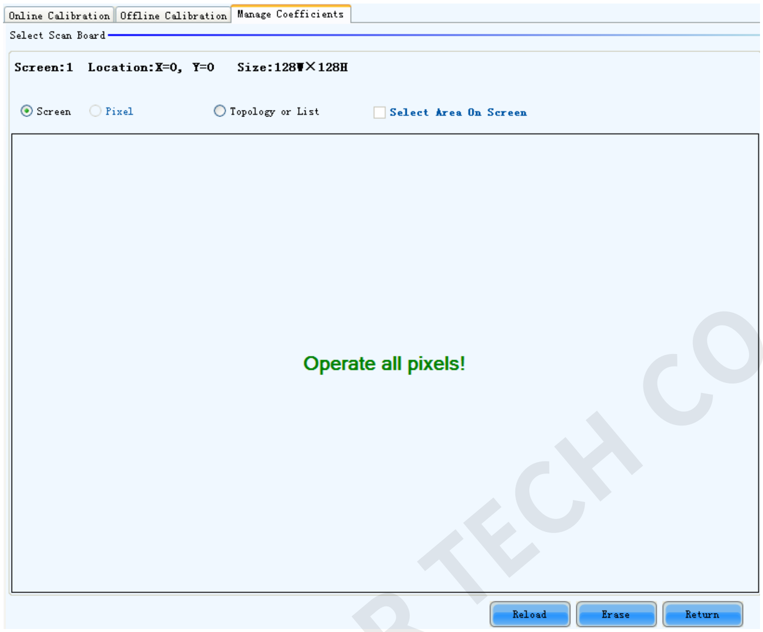
⚠	1. If the adjustment operations are to be applied to another area, the problem of this area should be similar to the area selected in **Step 1)**. Otherwise, don' t apply the operations to this area. 2. If the adjustment result of the new area is satisfying after applying the operations, click **Save** button again to save the adjusted calibration coefficients to the hardware.

7.7.2.6 Erase/Reload coefficients

Shown in Fig. 7-75 is the page for erasing/reload calibration coefficients

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

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



Screen:1 Location:X=0, Y=0 Size:128W×128H

● Screen ○ Pixel ○ Topology or List ☐ Select Area On Screen

Operate all pixels!

Fig. 7-75 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.

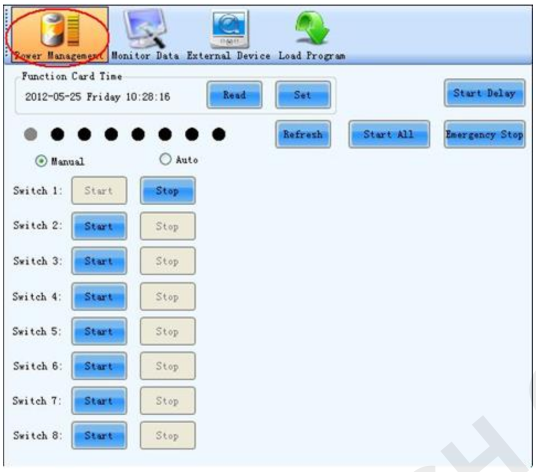
	TIP: The calibration coefficients will be their default values after the erase operation. Make a copy of the calibration coefficients (save to a database file) for safety.

7.8 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.

7.8.1 Power Management

Click the **Power Management** button in the **Function Card Management** page to open the page for power management. The Power Management page is shown in Fig. 7-76 Circled in the page is the **Power Management** button


Power Management
Monitor Data
External Device
Load Program
Read
Set
Start Delay
Refresh
Start All
Emergency Stop
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

Function Card Time: 2012-05-25 Friday 10:28:16

◉ Manual ○ Auto

Fig. 7-76 Power management page

Function Card Time panel

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

Set Notes

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

Start Delay

Set the delay time for starting power. If the delay time is successfully set, the stating of each of the power supply control by the function card will be delay for the delay time. For example, if the delay time is set as 2 seconds, then each power supply will delay 2 seconds when starts.

Refresh

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

Start All

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

Emergency Stop

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

Manual

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

Auto

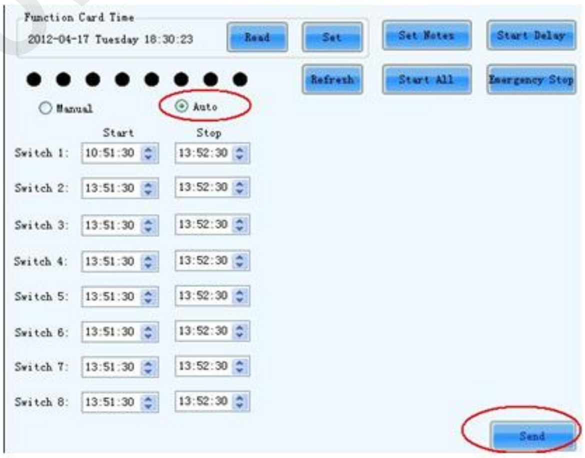
This is to set the power control into auto control mode. The hardware system will start or stop the power supplies according to the schedule automatically. The schedule can be set and send to the hardware through NovaLCT-Pluto.

7.8.1.1 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.

7.8.1.2 Auto Power Control

The page for automatic power control is as shown in Fig. 7-77,



Function Card Time
2012-04-17 Tuesday 18:30:23

● ● ● ● ● ● ● ●

○ Manual ● Auto

	Start	Stop
Switch 1:	10:51:30	13:52:30
Switch 2:	13:51:30	13:52:30
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

Fig. 7-77 Automatic power control page

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 in 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.

1. In Auto mode, the schedule will be disabled if the **Emergency Stop** button is clicked. The schedule won’ t be enabled until the **Start All** 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.

7.8.2 Monitor Data

Click **Monitor Data** button in the **Function Card Management** page to open the page for system monitoring as shown below:

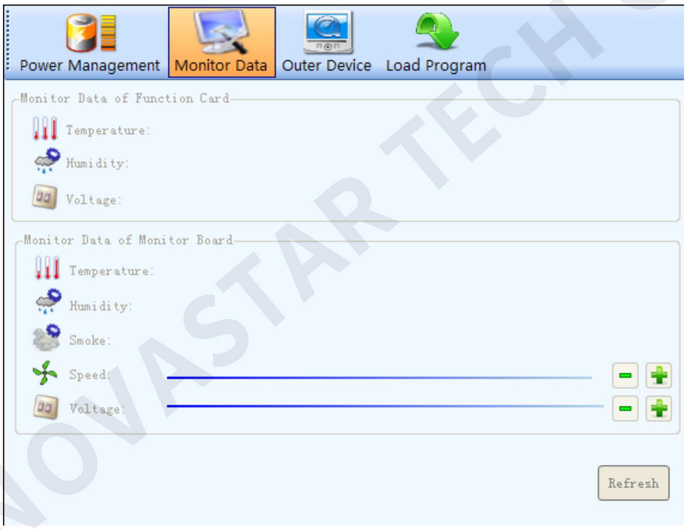

Power Management
Monitor Data
Outer Device
Load Program
Monitor Data of Function Card
Temperature:
Humidity:
Voltage:
Monitor Data of Monitor Board
Temperature:
Humidity:
Smoke:
Speed:
Voltage:
Refresh

Fig. 7-78 System monitoring page

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.

7.8.3 External Device Management

Requirement: light sensor connected.

Click the **Outer Device** button in the **Function Card Management** page to open the page for external devices management as shown in Fig. 7-79:

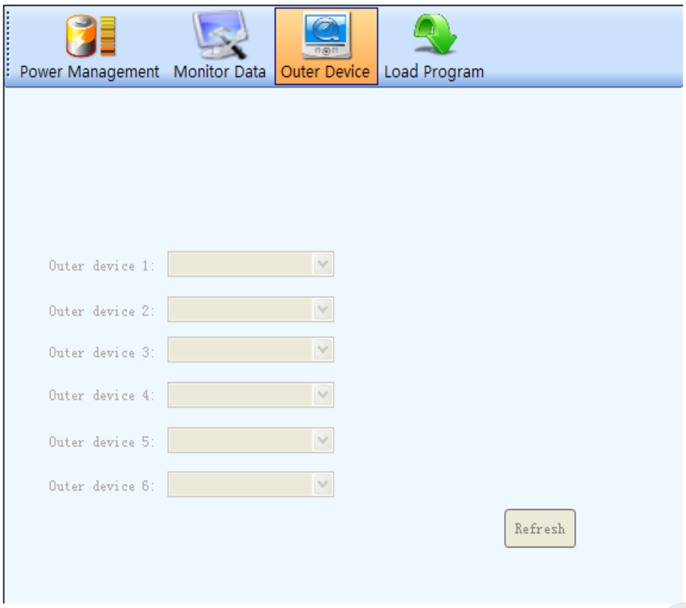

Power Management
Monitor Data
Outer Device
Load Program
Outer device 1:
Outer device 2:
Outer device 3:
Outer device 4:
Outer device 5:
Outer device 6:
Refresh

Fig. 7-79 External device management page

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.

7.8.4 Load Program

Click the **Load Program** button in the **Function Card Management** page to open the page for loading program to the hardware as shown in Fig. 7-80:

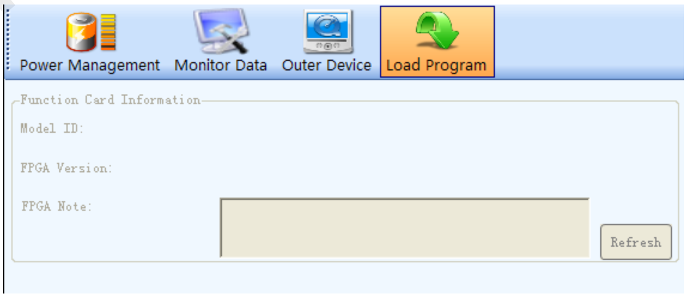

Power Management
Monitor Data
Outer Device
Load Program
Function Card Information
Model ID:
FPGA Version:
FPGA Note:
Refresh

Fig. 7-80 Program loading page

Refresh

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

Input **admin** directly to access the options for program loading as shown in Fig. 7-81.

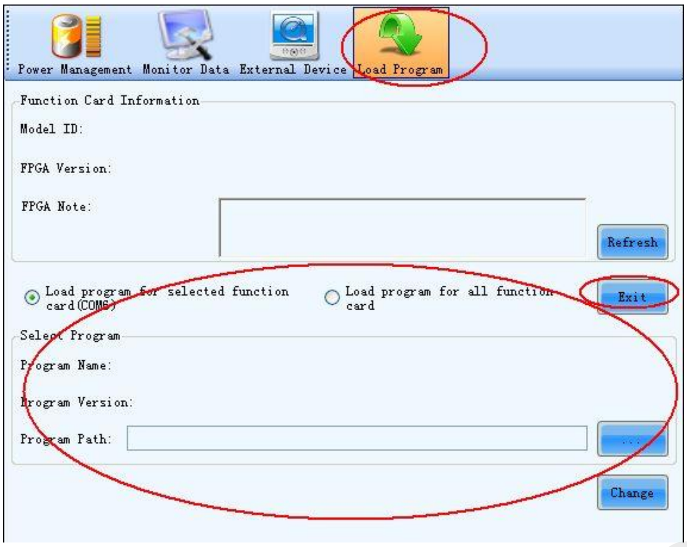

Power Management
Monitor Data
External Device
Load Program
Function Card Information
Model ID:
FPGA Version:
FPGA Note:
Refresh
● Load program for selected function card(COM6)
○ Load program for all function card
Exit
Select Program
Program Name:
Program Version:
Program Path:
...
Change

Fig. 7-81 Page with program loading options

Exit

Click this button to go back to the page shown in Fig. 7-80.

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.

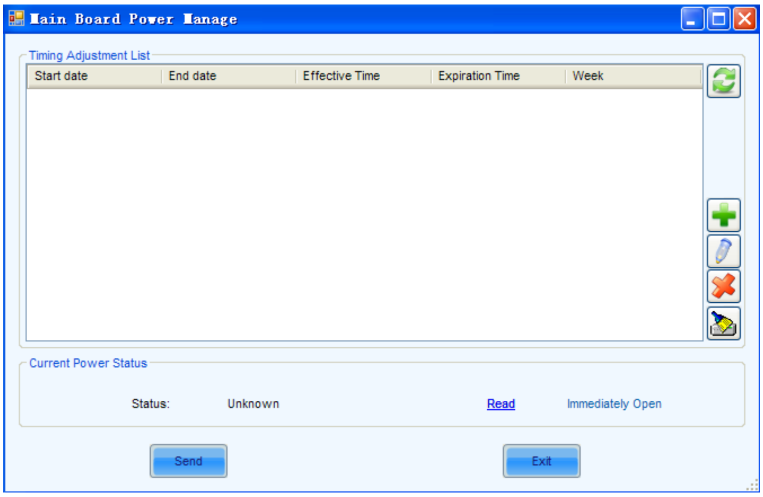
Change

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

	1. There isn' t any place to view the typing when inputting the password. Just type in the password directly and the page shown in Fig. 8-79 will change to the one shown in Fig. 7-81; 2. Just input in the password again if the one input before was wrong; 3. Changing the program is not recommended unless there are problems with the function cards.

7.9 Main Board Power Management

For the power control of asynchronous control card, the figure below is the main menu of power management.


Main Board Power Manage
Timing Adjustment List
Start date
End date
Effective Time
Expiration Time
Week
Current Power Status
Read
Immediately Open
Send
Exit

Status: Unknown

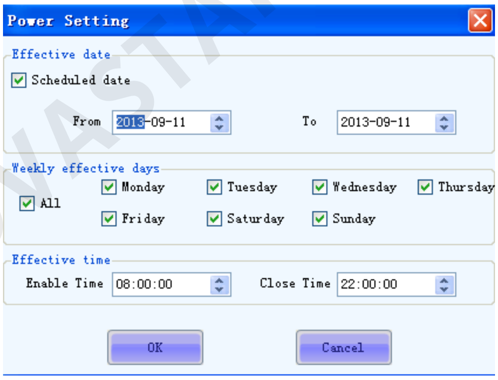
Fig. 7-82 Power Management Window of the Board

1) Immediate On/Off

Clicking "read back" can read the current power state, and the "Immediate On" or "Immediate Off" nearby can make real-time control over the asynchronous card power.

2) Clocked On/Off

Click Add button ✚ to set, for example, effective date, effective days and effective time on the following menu, and then click "Ok".


Power Setting
Effective date
Weekly effective days
Effective time
OK
Cancel

☑ Scheduled date

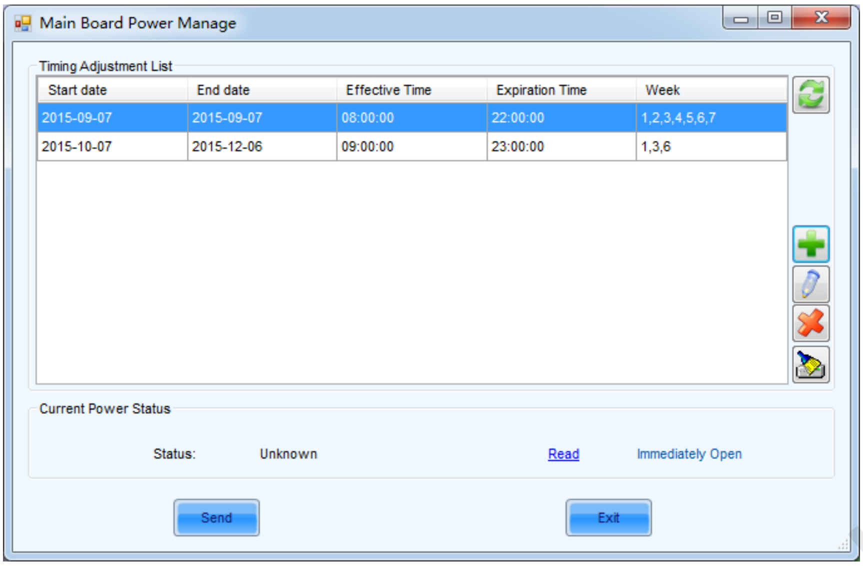
From 2013-09-11 To 2013-09-11

☑ All ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Enable Time 08:00:00 Close Time 22:00:00

Fig. 7-83 Add Power Clocked Control

Return to the main menu of power management and click "Send" to send the clocked control command to the asynchronous card.


Main Board Power Manage
Timing Adjustment List
Current Power Status
Status:
Unknown
Read
Immediately Open
Send
Exit

Start date	End date	Effective Time	Expiration Time	Week
2015-09-07	2015-09-07	08:00:00	22:00:00	1,2,3,4,5,6,7
2015-10-07	2015-12-06	09:00:00	23:00:00	1,3,6

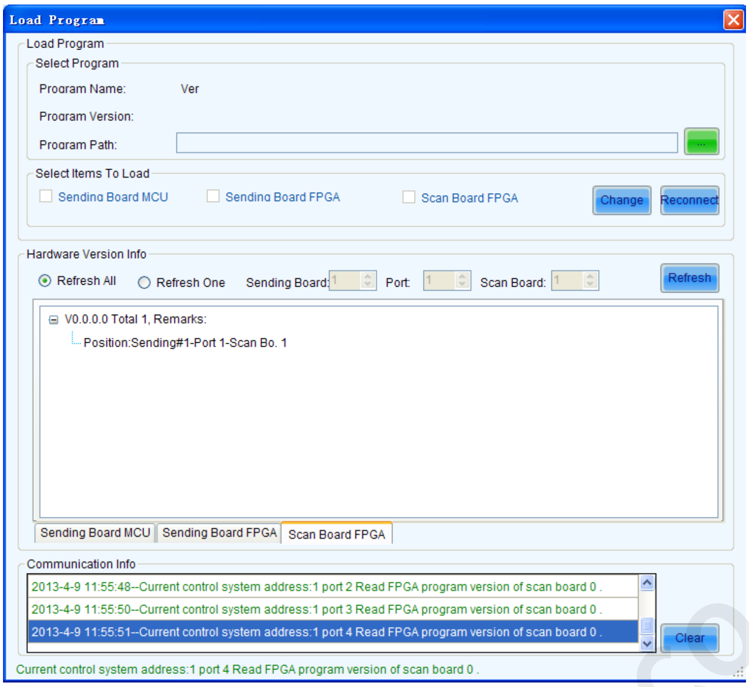
Fig. 7-84 Send the clocked power control commend to the asynchronous card

8 Hardware Program Upgrade

Operation steps for updating hardware program in LCT:

Login as an advanced user, and input **admin** in the main interface of NovaLCT Pluto to open hardware program loading page.

	1. There isn' t any place to view the typing when inputting the password. Just type in the password directly. 2. Just input the password again if you typed the wrong password. 3. Hardware program updating is not recommended if no problem occurs.


Load Program
Load Program
Select Program
Program Name:
Program Version:
Program Path:
...
Select Items To Load
☐ Sending Board MCU
☐ Sending Board FPGA
☐ Scan Board FPGA
Change
Reconnect
Hardware Version Info
● Refresh All
○ Refresh One
Sending Board: 1
Port: 1
Scan Board: 1
Refresh
Sending Board MCU
Sending Board FPGA
Scan Board FPGA
Communication Info
Clear

Program Name: Ver

V0.0.0.0 Total 1, Remarks:
Position:Sending#1-Port 1-Scan Bo. 1

```
2013-4-9 11:55:48--Current control system address:1 port 2 Read FPGA program version of scan board 0 .
2013-4-9 11:55:50--Current control system address:1 port 3 Read FPGA program version of scan board 0 .
2013-4-9 11:55:51--Current control system address:1 port 4 Read FPGA program version of scan board 0 .
Current control system address:1 port 4 Read FPGA program version of scan board 0 .
```

Fig. 8-1 Hardware program loading page

Program Path

Select the program to be loaded to the hardware.

Scan Board FPGA

Select this option to upgrade the FPGA program of a scan board.

Change

Click this button to load the selected program to the selected hardware.

Refresh All

If this option is selected, the version info of 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 info of the selected scan board will be refreshed when click the **Refresh** button.

Refresh

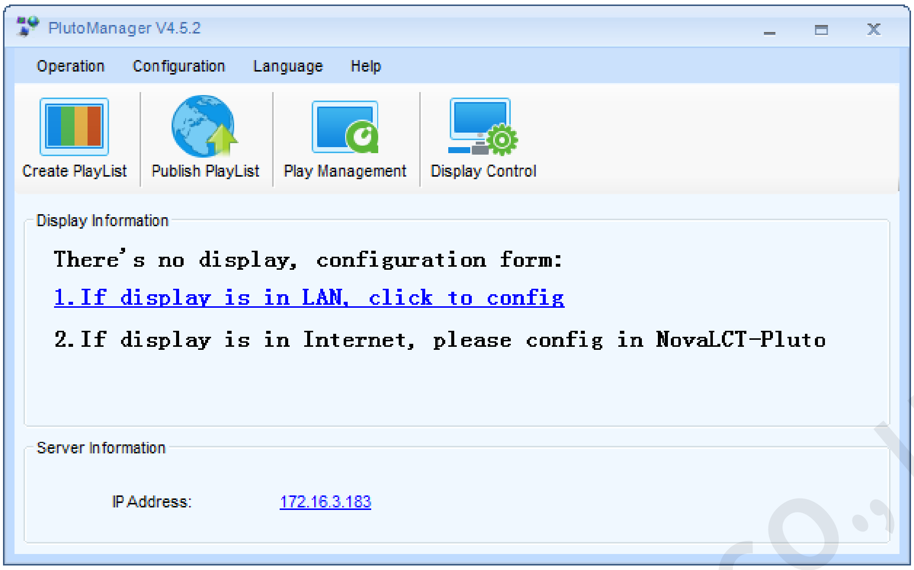
Click this button to show the current version info of the hardware. This can be used to check whether the hardware program has been upgraded.

9 Introduction to PlutoManager

PluotManager is a play and management software for Pluto asynchronous control system, it can connect to the asynchronous control card via LAN or internet. The main functions include client management, Play-Program editing, Play-Program tranmission, play status remote monitoring etc. The software interface is simple and easy to learn. Main features as follows:

- Support a variety of media formats, such as video, images, text, weather, clock, countdown, Word, Excel, Txt etc;
- Support Play-Program transmission via online or offline;
- Support multi-window playing;
- Support hiding preview window ;
- Self-adapting window display; ;
- Multiple clients synchronous display ;
- Multi-period display and support cycle inserted display, timing inserted display ;
- Remote restart terminal;
- Remote setting of terminal IP;
- Support upgrading of word stock;
- Support upgrading by service packs;
- Support remote software upgrading;
- Simple interface and easy operation;
- Support multiple languages;
- Support transparency;
- friendly interface, easy to use;
- Support to change the background image;
- Support customization.

9.1 Introduction to PlutoManager Interface


PlutoManager V4.5.2
Operation
Configuration
Language
Help
Create PlayList
Publish PlayList
Play Management
Display Control
Display Information
Server Information

There's no display, configuration form:

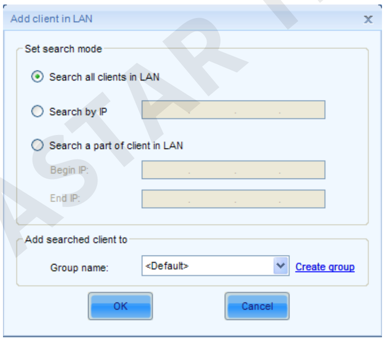
1.If display is in LAN, click to config

2.If display is in Internet, please config in NovaLCT-Pluto

IP Address: 172.16.3.183

Fig. 9-1 Main interface of PlutoManager with no client connection

According to tips in the page, if the client is in LAN, click configuration to select add all clients or add client with specific IP.


Add client in LAN
Set search mode
Add searched client to
Create group
OK
Cancel

● Search all clients in LAN

○ Search by IP

○ Search a part of client in LAN

Begin IP:

End IP:

Group name: <Default>

Fig. 9-2 Add client in LAN

If the client is in Internet, configure system network parameters in NovaLCT-Pluto, please refer to < Nova Pluto Control System User Manual >for details.

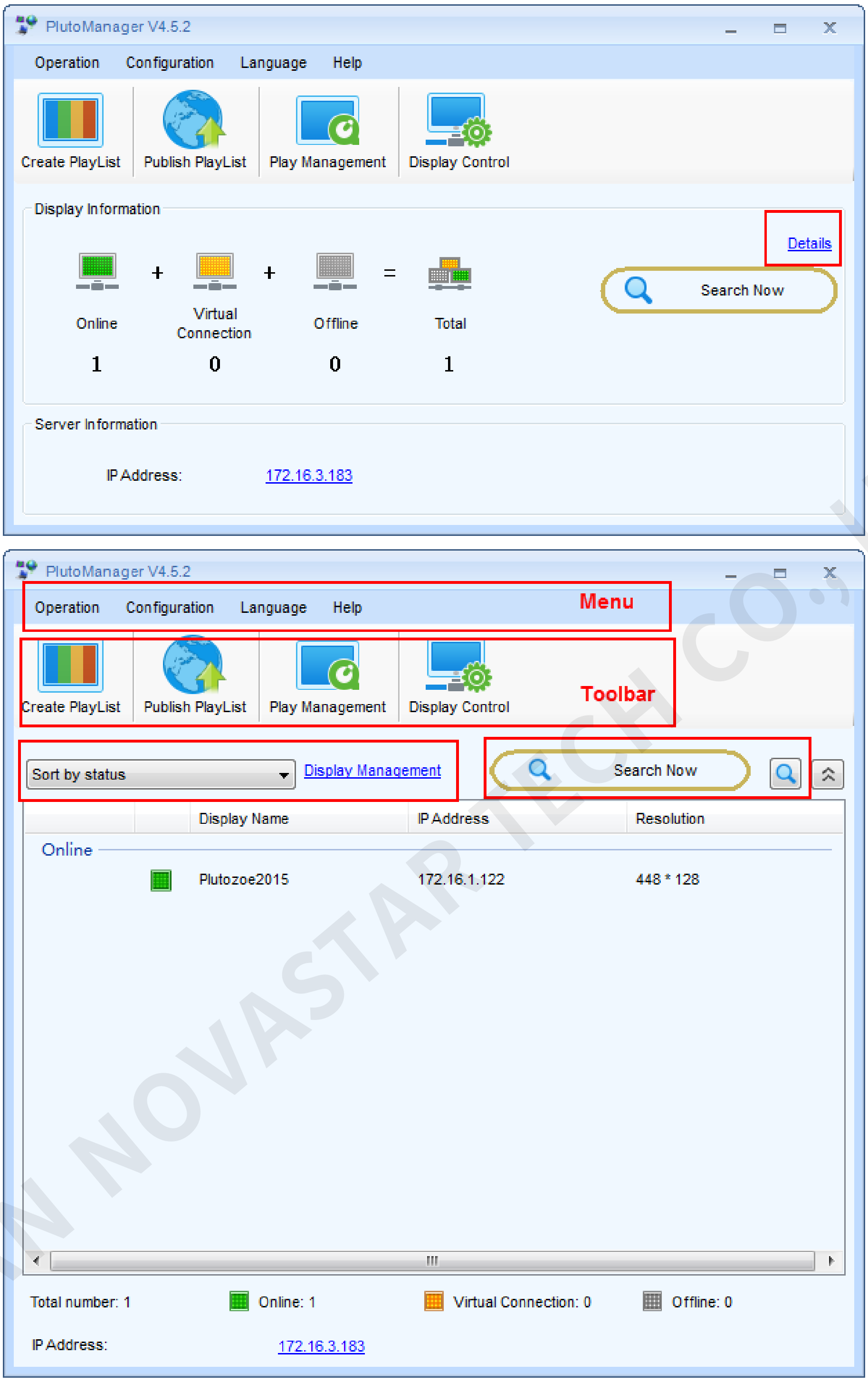

PlutoManager V4.5.2
Operation
Configuration
Language
Help
Create PlayList
Publish PlayList
Play Management
Display Control
Display Information
Details
Search Now
Online
Virtual Connection
Offline
Total
1
0
0
1
Server Information
IP Address:
172.16.3.183
PlutoManager V4.5.2
Menu
Toolbar
Sort by status
Display Management
Search Now
Display Name
IP Address
Resolution
Online
Plutozoe2015
172.16.1.122
448 * 128
Total number: 1
Online: 1
Virtual Connection: 0
Offline: 0
IP Address:
172.16.3.183

Fig. 9-3 PlutoManager main interface

Menu /Toolbar: Please refer to Table 9-1 in the next section for details;

Client list: Show clients by group, LED display size and status respectively. And also show client name, IP, corresponding LED display width and height and status;

Search now: Search client by IP or name;

Client sorting: non-sorting, ascending or descending sort by name, ascending or descending sort by IP;

IP: View the IP of current computer;

Client info: Shows the total quantity of clients, online client quantity and of offline client quantity.

9.2 Menu/Toolbar

Toolbar		Icon	Function
operate	Create Play-Program	Create PlayList	New Add a page Add a window Preview Save
	Publish Play-Program	Publish PlayList	Play-Program conversion Online publish Offline publish Instant notification Emergency insertion
	Play management	Play Management	View and manage current play info. Play log management External storage device management Time management
	Online upgrade		Version readback Online upgrade
	Terminal time synchronization		It can be set as time synchronization through PlutoManager or the Cloud server, or auto time synchronization through the terminal.
	Font management		Read the current font of the terminal Update the font of the terminal
	Language management		Readback the current language of the terminal Update the language of the terminal

	Terminal control	Display Control	Read and set the time zone and time of the terminal; Immediately, timing to restart the terminal Set the terminal password; The terminal IP settings for wired configuration, or terminal Wifi settings and access for wireless configuration; Brightness adjustment of terminal display screen (manual, timing, automatic); Configuration and access of terminal parameters connected to the server;
Configuration	Software configuration		IP configuration Connecting port configuration
	Play-Program directory configuration		Play-Program storage directory configuration
	Authorization configuration		Load terminal authorization document Input terminal authorization password
Language	English(en)		Multi-language switching
	Francais(fr)		
	Chinese（zh-CN）		
	中文(繁體)(zh-CHT)		
	日本語(日本)(ja-jp)		
Help	Document		Nova pluto control system user manual.chm
	About		Software info

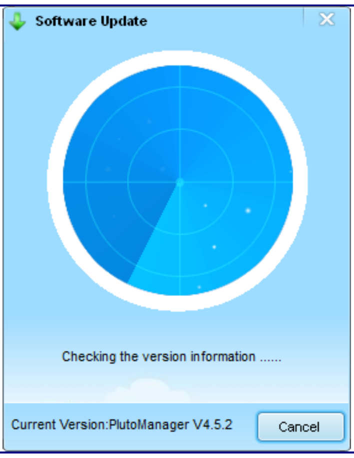
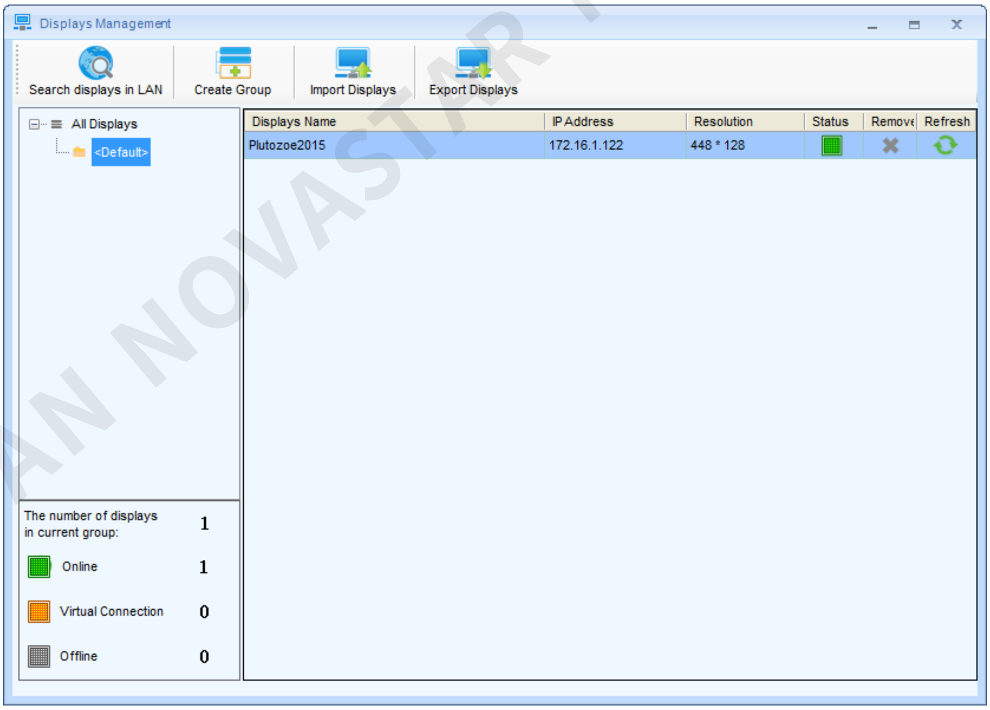
	Software Update	 Software Update Checking the version information ...... Current Version:PlutoManager V4.5.2 Cancel	

Table. 9-1 PlutoManager toolbar

10 PlutoManager Operation Instruction

10.1 Client management

Click Client Management on the toolbar of PlutoManager main interface to enter Client management page (Fig. 10-1).


Displays Management
Search displays in LAN
Create Group
Import Displays
Export Displays
All Displays
<Default>

Displays Name	IP Address	Resolution	Status	Remove	Refresh
Plutozoe2015	172.16.1.122	448 * 128	🟩	✖	⟳

The number of displays in current group:	1
🟩 Online	1
🟧 Virtual Connection	0
▨ Offline	0

Fig. 10-1 Client management page

The following management operations can be performed in Client management page:

Icon/Name	Function	Operation

Search Display In LAN	Search client in LAN	1) Click the icon 2) Select Connect to All or Connect to specified IP 3) Click Connect
Create Group	Create group	1) Click the icon 2) Add a group name, and click OK Rename: In the client group list, right-click the group to be renamed. In the right-click menu, click Rename and press ok after modification.
Import Display	Import client	1) Click the icon 2) Select the path of the file, and click OK (Provided that prior the client has been previously exported. There’s an existing client file.)
Export Display	Export client	1) Click the icon 2) Select save path of the file 3) Select the client group to be exported or choose export all clients 4) Click OK
✖	Delete offline client	Offline clients won’t be shown after clicking this button
Refresh ⟳	Refresh	Refresh client status Reconnect the offline terminal

Table. 10-1 Client management toolbar

1) ADD Client in LAN

Add client operation steps:

Method one: Click **Client Management→Search client in LAN→Search all clients in LAN**, PlutoManger will add all clients in LAN.

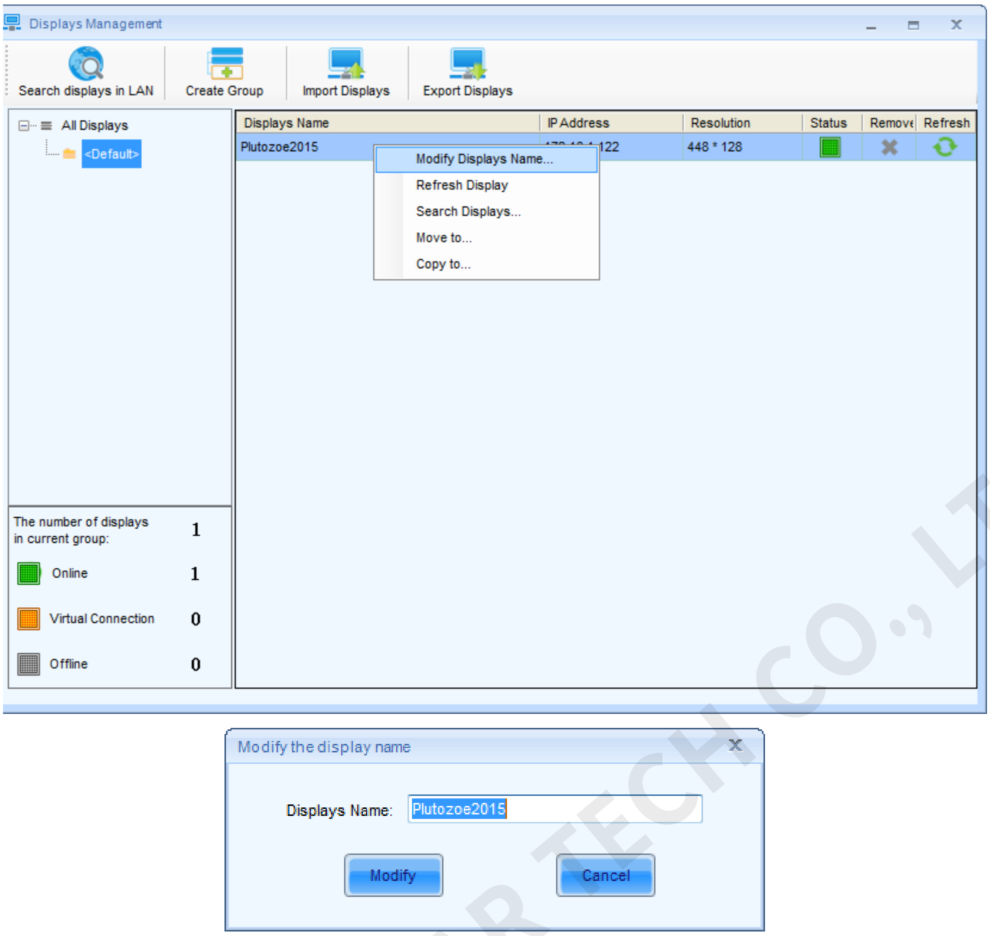
Method two: Click **Client Management→Search client in LAN→Search by IP (the client IP must be known)**, only client with specific IP will be added.

Method three: Click **Client Management→Search client in LAN→Search a part of client in LAN, input IP scope.**

After adding client by any of above three methods, the client info can be seen in both main interface and client management page.

2) Modify the Displays Name

Select terminal→click right button→【Modify Displays Name】, fill the new client name, then click 【Modify】.


Displays Management
Search displays in LAN
Create Group
Import Displays
Export Displays
All Displays
<Default>
Modify Displays Name...
Refresh Display
Search Displays...
Move to...
Copy to...
Online
Virtual Connection
Offline
Modify the display name
Modify
Cancel

Displays Name	IP Address	Resolution	Status	Remove	Refresh
Plutozoe2015	172.16.1.122	448 * 128	🟩	✖	⟳

The number of displays in current group: 1

Online 1

Virtual Connection 0

Offline 0

Displays Name: Plutozoe2015

Fig. 10-2 Modify Displays name

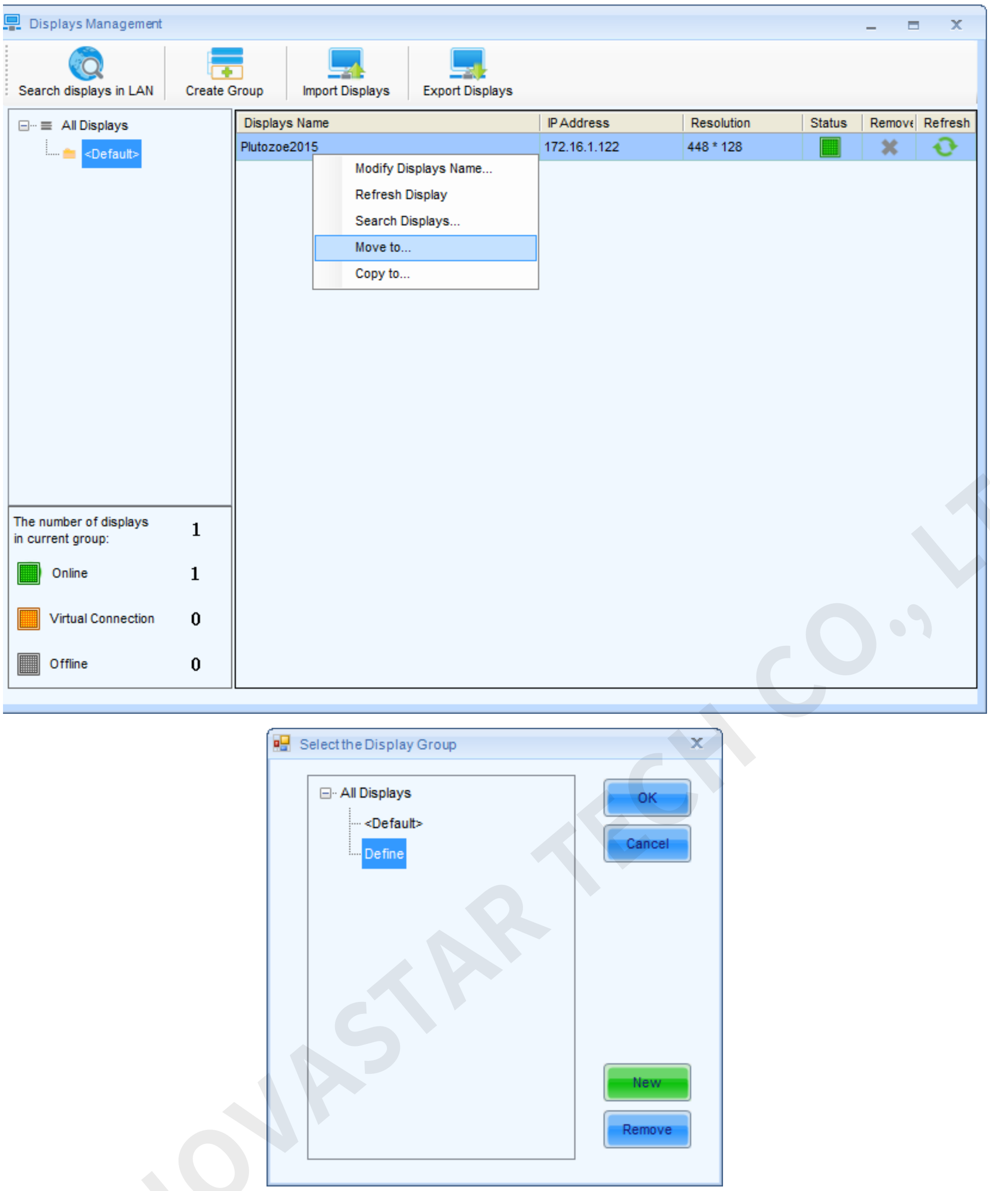
3) Display Group

Click Create group to create a new group, and then group the clients. That is to divide clients into groups. Grouping can be done through the following two ways:

Methods one:

Select one or more clients, use the right button to click【move to...】.And then to choose one group in the window of **Select the Display Group**, and then click **OK.**

The clients will be moved to the selected group.


Displays Management
Search displays in LAN
Create Group
Import Displays
Export Displays
All Displays
<Default>
Modify Displays Name...
Refresh Display
Search Displays...
Move to...
Copy to...
Select the Display Group
All Displays
<Default>
Define
OK
Cancel
New
Remove

Displays Name	IP Address	Resolution	Status	Remove	Refresh
Plutozoe2015	172.16.1.122	448 * 128	🟩	✕	⟳

The number of displays in current group: 1

🟩 Online 1

🟧 Virtual Connection 0

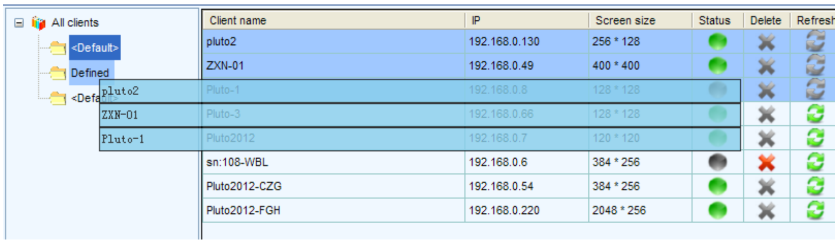
▨ Offline 0

Fig. 10-3 Client grouping methods one

Methods two:

Select one or multiple terminal, And drag it to the target group.

The following fig shows dragging three screens into the **Defined** group.

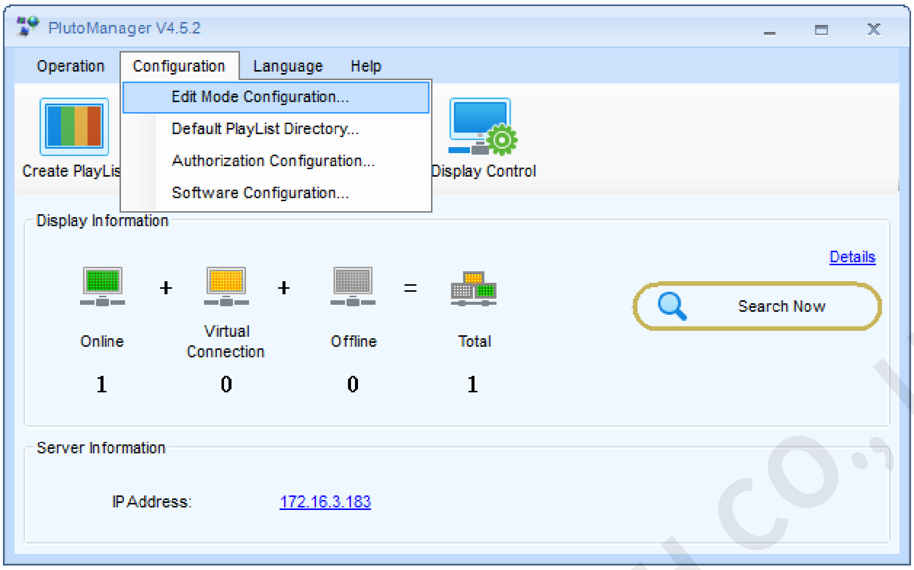

All clients
<Default>
Defined
<Defa
pluto2
ZXN-01
Pluto-1

Client name	IP	Screen size	Status	Delete	Refresh
pluto2	192.168.0.130	256 * 128	●	✕	⟳
ZXN-01	192.168.0.49	400 * 400	●	✕	⟳
Pluto-1	192.168.0.8	128 * 128	●	✕	⟳
Pluto-3	192.168.0.66	128 * 128	●	✕	⟳
Pluto2012	192.168.0.7	120 * 120	●	✕	⟳
sn:108-WBL	192.168.0.6	384 * 256	●	✕	⟳
Pluto2012-CZG	192.168.0.54	384 * 256	●	✕	⟳
Pluto2012-FGH	192.168.0.220	2048 * 256	●	✕	⟳

Fig. 10-4 Client grouping methods two

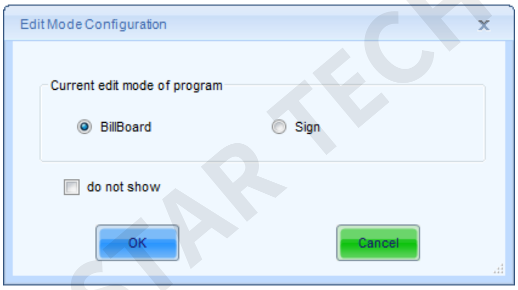
10.2 Create Play-Program

Click "Configuration"→"Edit Mode Configuration", check "BillBoard", and click "OK".


PlutoManager V4.5.2
Operation
Configuration
Language
Help
Edit Mode Configuration...
Default PlayList Directory...
Authorization Configuration...
Software Configuration...
Create PlayLis
Display Control
Display Information
Details
Search Now
Online
Virtual Connection
Offline
Total
Server Information

Online 1 + Virtual Connection 0 + Offline 0 = Total 1

IP Address: 172.16.3.183

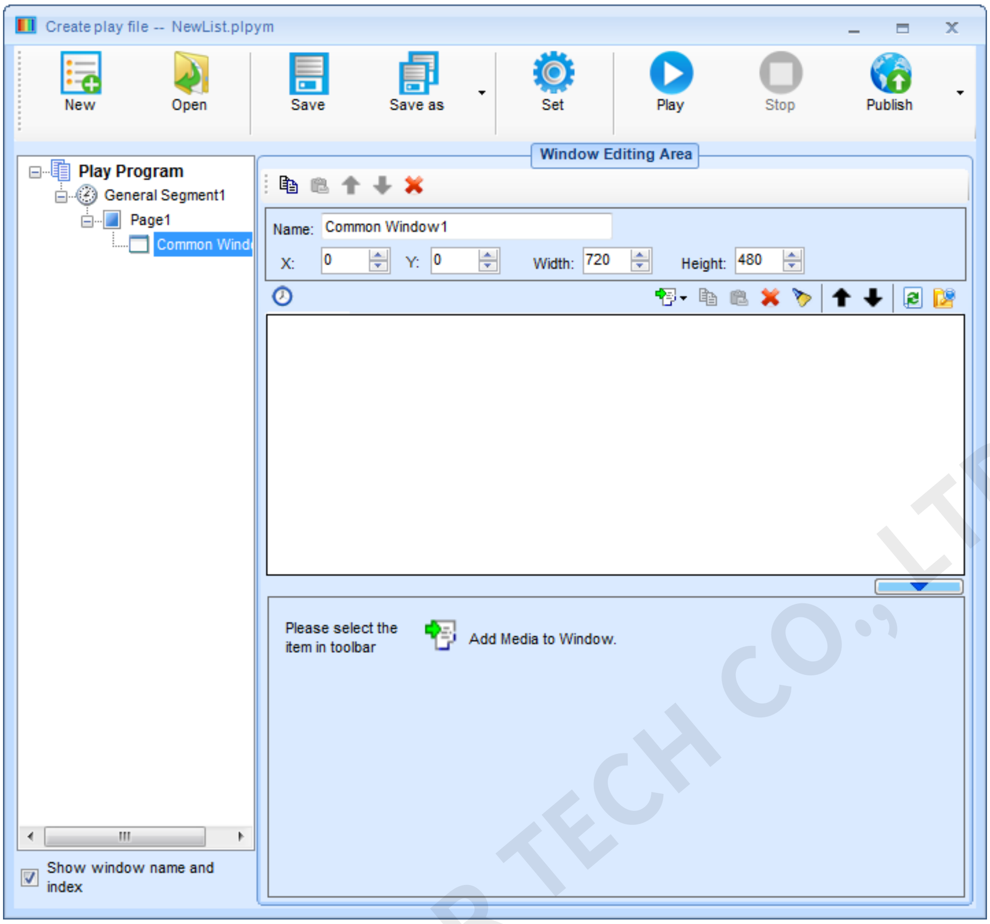

Edit Mode Configuration
Current edit mode of program
OK
Cancel

● BillBoard ○ Sign

☐ do not show

Fig. 10-5 Edit mode of program

1) Click **Create Play List** in the toolbar of PlutoManager main interface to enter the Play-Program creating page shown in Fig. 10-6.



Create play file -- NewList.plpym

Play Program
General Segment1
Page1
Common Wind

Name: Common Window1

X: 0 Y: 0 Width: 720 Height: 480

Please select the item in toolbar

Add Media to Window.

☑ Show window name and index

Fig. 10-6 Play-Program creating page

10.2.1 Play Program Structure

Play program can save as the file which extension is **.plpym**, it is composed by several common segments, otherwise, it can also contain one or more inserted segments. The common segment and inserted segment is composed by one or more pages, and each page is composed by one or more windows. The window can be divided into **Common Window, Clock Window, Scroll Text Window, Countdown Timer Window, Weather Window .** The **Common Window** can contain one or more different types of media. One example of play program structure is shown as Fig. 10-7.

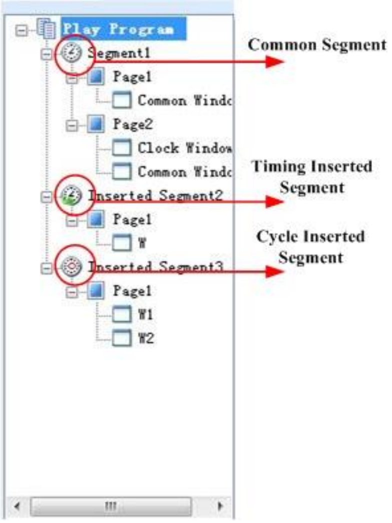

Play Program
Segment1
Page1
Common Windo
Page2
Clock Window
Common Windo
Inserted Segment2
Page1
W
Inserted Segment3
Page1
W1
W2
Common Segment
Timing Inserted Segment
Cycle Inserted Segment

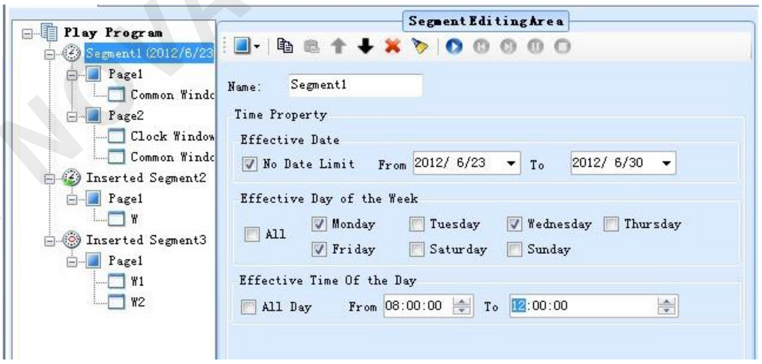
Fig. 10-7 Example of play program

✧ Common Segment

The segment has these time properties: **Effective Date, Effective Days of the Week, Effective Time of the Day**.

For Example: The common segment **Segment1**, from June 23, 2012 to June 30, 2012, every Monday,

Wednesday, Friday, played from 8:00 to 12:00, as shown in Fig.10-8.


Play Program
Segment1 (2012/6/23
Page1
Common Windo
Page2
Clock Window
Common Windo
Inserted Segment2
Page1
W
Inserted Segment3
Page1
W1
W2
Segment Editing Area

Name: Segment1

Time Property

Effective Date

☑ No Date Limit From 2012/ 6/23 To 2012/ 6/30

Effective Day of the Week

☐ All ☑ Monday ☐ Tuesday ☑ Wednesday ☐ Thursday ☑ Friday ☐ Saturday ☐ Sunday

Effective Time Of the Day

☐ All Day From 08:00:00 To 12:00:00

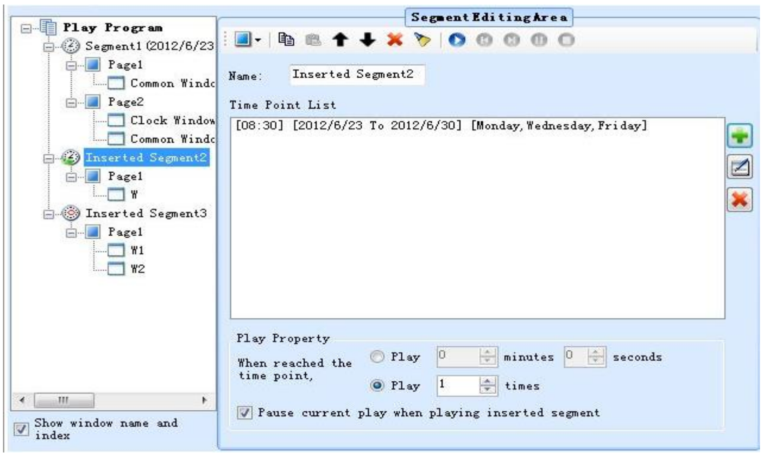
Fig. 10-8 Common segment Segment1

✧ Timing Inserted Segment

The segment is started to play for specific times or duration at a specific time point in effective days of effective date. It has these time properties: **Effective Date, Effective Days of the Week** and several **Specific Time Points**.

For Example: Timing inserted segment **Segment2**, from June 23, 2012 to June 30, 2012, every

Monday, Wednesday, and Friday, played at 8:30 for 1 times, as shown in Fig. 10-8


Play Program
Segment1 (2012/6/23
Page1
Common Windo
Page2
Clock Window
Common Windo
Inserted Segment2
Page1
W
Inserted Segment3
Page1
W1
W2
Show window name and index
Segment Editing Area

Name: Inserted Segment2

Time Point List

[08:30] [2012/6/23 To 2012/6/30] [Monday, Wednesday, Friday]

Play Property

When reached the time point, ○ Play 0 minutes 0 seconds

● Play 1 times

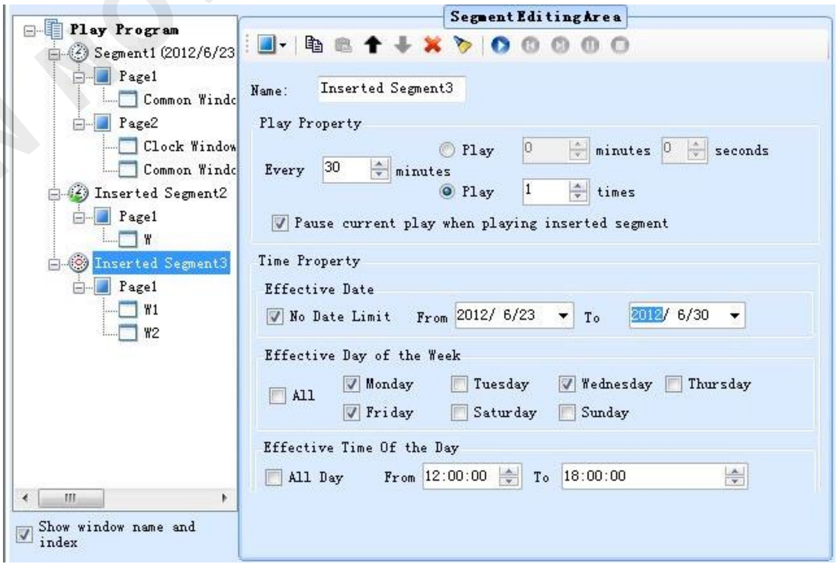
☑ Pause current play when playing inserted segment

Fig. 10-9 Timing inserted segment **Inserted Segment2**

✧ Cycle Inserted Segment

The segment is played for specific times or duration at regular intervals in effective time of effective days of effective date. It has these time properties: **Effective Date, Effective Days of the Week, Effective Time of the Day** and **Play Intervals**.

For Example: Cycle inserted segment **Segment3**, from June 23, 2012 to June 30, 2012, every Monday, Wednesday, Friday, from 8:00 to 12:00, played one time every 30 minutes, shown as Fig. 10-9.


Play Program
Segment1 (2012/6/23
Page1
Common Windo
Page2
Clock Window
Common Windo
Inserted Segment2
Page1
W
Inserted Segment3
Page1
W1
W2
Show window name and index
Segment Editing Area

Name: Inserted Segment3

Play Property

Every 30 minutes ○ Play 0 minutes 0 seconds

● Play 1 times

☑ Pause current play when playing inserted segment

Time Property

Effective Date

☑ No Date Limit From 2012/ 6/23 To 2012/ 6/30

Effective Day of the Week

☐ All ☑ Monday ☐ Tuesday ☑ Wednesday ☐ Thursday

☑ Friday ☐ Saturday ☐ Sunday

Effective Time Of the Day

☐ All Day From 12:00:00 To 18:00:00

Fig. 10-10 Cycle inserted segment **Inserted Segment3**

✧ Page

A page is an area on the computer display screen that is mapped to a LED display for showing visible media sources (such as videos, pictures and text) on the LED display.

- **Global page**

Global page is a special common page that it always stays on the front of all other common pages. In the case that common pages of different window layout are needed while a window at a fix position is also required (such like that for clock, weather info or scrolling text), putting the fix position window in a global page is the best way for the window layout design. But if only one common page is needed, a global page may not be necessary as the fix position window can be set directly to the position required.

- **Common Page**

A common page can have multiple windows and the layout of the windows can be customized. A segment can have multiple pages. And of course, the window layouts of these common pages can be different from each other. The common pages will be shown in the order they are listed in the segment. Normally, one common page is enough for a segment.

✧ Window

A window, also named a play window, is an area of a page in which visible media sources will be show. Note that any window must be affiliated to a page.

- **Common Window**

A common window could have its own media sources list and thus different types of media sources can be played in it in the list order.

- **Scroll Text Window**

A window that is only for showing scrolling text.

- **Clock Window**

A window that is only for analog or digital clocks.

- **Countdown Timer Window**

A window that is only for showing information from a time meter.

- **Weather Window**

A window that is only for showing weather information.

10.2.2 Play Program Dispatch Rule

If there are conflicts between the playing times of segments, follow the below rules:

A. The back one has the higher priority for the same type segments.

B. If the timing inserted segment has the same playing time point as the cycle inserted segment, play the timing inserted segment.

You can view the dispatching result between different dates in the **Play Program Editing Area**.

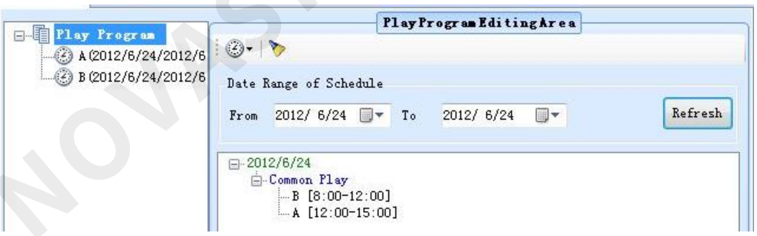
For example:

✧ Common Segment

Suppose time properties of segment A and segment B are set as follow:

A	B
From June 24, 2012 to June 30, 2012	From June 24, 2012 to June 30, 2012
Every day in a week	Every day in a week
From 8:00:00 to 15:00:00 in each day	From 8:00:00 to 12:00:00 in each day

- If B is at the back of A in the play program, then B has the priority to be played on time confliction. The dispatching results will be shown as Fig.10-10 (In June 24, 2012).



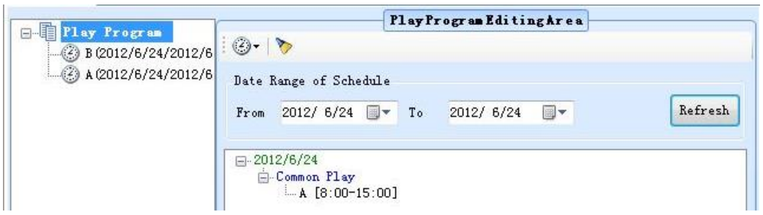
A (2012/6/24/2012/6
B (2012/6/24/2012/6

From 2012/ 6/24 To 2012/ 6/24

2012/6/24
Common Play
B [8:00-12:00]
A [12:00-15:00]

Fig. 10-11 B has higher priority than A

- Otherwise, if A is at the back of B in the play program, then A has the priority to be played on time confliction. The dispatching results will be shown as Fig. 10-11 (In June 24, 2012).



B (2012/6/24/2012/6
A (2012/6/24/2012/6

From 2012/ 6/24 To 2012/ 6/24

2012/6/24
Common Play
A [8:00-15:00]

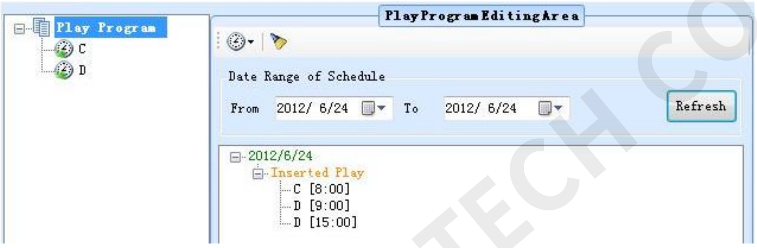
Fig. 10-12 A has higher priority than B

✧ Timing Inserted Segment

Suppose time properties of timing inserted segment C and timing inserted segment D are set as follow:

C	D
From June 24, 2012 to June 30, 2012	From June 24, 2012 to June 30, 2012
Every day in a week	Every day in a week
At 8:00, 15:00	At 9:00, 15:00

- If D is at the back of C in the play program, then D has the priority to be played at the same time point (15:00). The dispatching results will be shown as Fig. 10-12 (In June 24, 2012).



Play Program
C
D

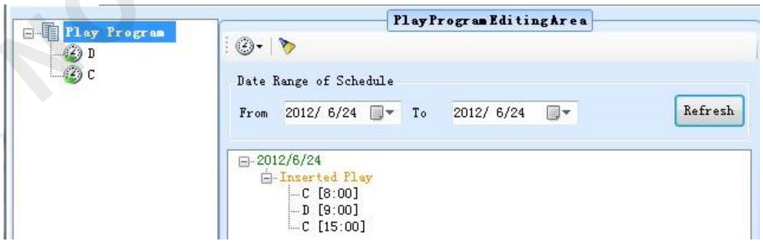
Date Range of Schedule

From 2012/ 6/24 To 2012/ 6/24

2012/6/24
Inserted Play
C [8:00]
D [9:00]
D [15:00]

Fig. 10-13 D has higher priority than C

- Otherwise, if C is at the back of D in the play program, then C has the priority to be played at the same time point(15:00). The dispatching results will be shown as Fig. 10-13(In June 24, 2012).



Play Program
D
C

Date Range of Schedule

From 2012/ 6/24 To 2012/ 6/24

2012/6/24
Inserted Play
C [8:00]
D [9:00]
C [15:00]

Fig. 10-14 C has higher priority than D

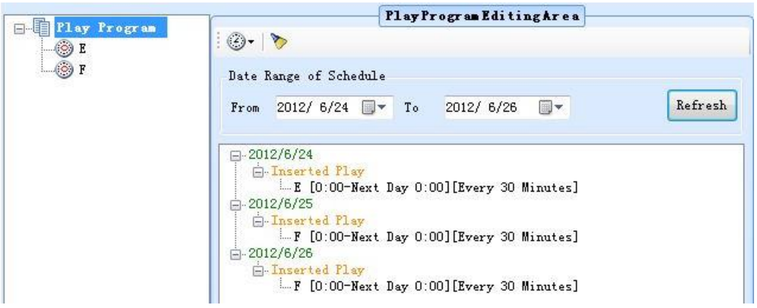
✧ Cycle Inserted Segment

Suppose time properties of cycle inserted segment E and cycle inserted segment F are set as follow:

E	F
From June 24, 2012 to June 25, 2012	From June 25, 2012 to June 26, 2012

Every day in a week	Every day in a week
Play Interval: 30 minutes	Play Interval: 30 minutes

- If F is at the back of E in the play program, then F has the priority to be played on time confliction. The dispatching results will be shown as Fig.10-14.

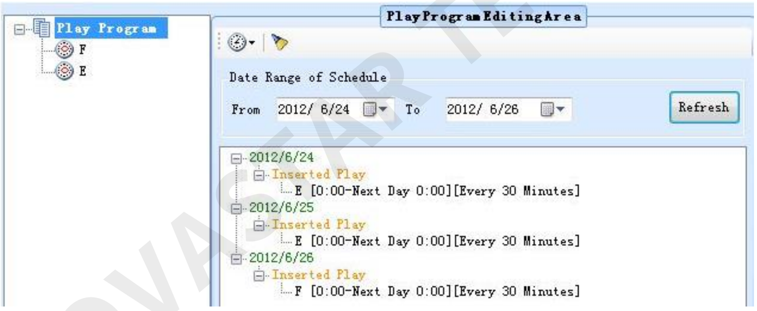


From 2012/ 6/24 To 2012/ 6/26

```
2012/6/24
  Inserted Play
    E [0:00-Next Day 0:00][Every 30 Minutes]
2012/6/25
  Inserted Play
    F [0:00-Next Day 0:00][Every 30 Minutes]
2012/6/26
  Inserted Play
    F [0:00-Next Day 0:00][Every 30 Minutes]
```

Fig. 10-15 F has higher priority than E

- Otherwise, if E is at the back of F in the play program, then E has the priority to be played on time confliction. The dispatching results will be shown as Fig. 10-15.



From 2012/ 6/24 To 2012/ 6/26

```
2012/6/24
  Inserted Play
    E [0:00-Next Day 0:00][Every 30 Minutes]
2012/6/25
  Inserted Play
    E [0:00-Next Day 0:00][Every 30 Minutes]
2012/6/26
  Inserted Play
    F [0:00-Next Day 0:00][Every 30 Minutes]
```

Fig. 10-16 E has higher priority than F

Note: If there is no confliction between two cycle inserted segments, but they has the same playing time point, still follow the same dispatch rule(the back one has higher priority).

For Example, suppose time properties of G and H are set as follow:

G	**H**
From June 24, 2012 to June 25, 2012	From June 24, 2012 to June 25, 2012
Every day in a week	Every day in a week
Play Interval: 20 minutes	Play Interval: 10 minutes

If H is at the back of G, H will be played at 00, 20, 40 minutes of every hour. Otherwise, play G.

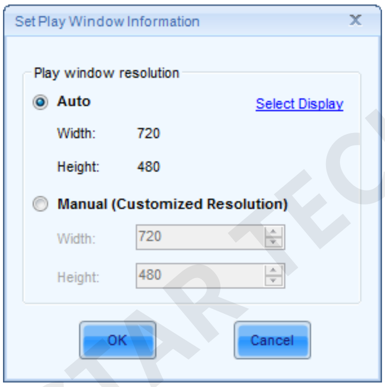
If one time point of timing inserted segment is the same as one playing time of cycle inserted segment, play timing inserted segment.

For example, suppose time properties of cycle inserted segment I and timing inserted segment L are set as follow, it would play L when arrived at 10:30.

I	L
From June 24, 2012 to June 25, 2012	From June 24, 2012 to June 25, 2012
Every day in a week	Every day in a week
Play Interval: 30 minutes	At 10:30

10.2.3 Display Window Setting

Click **New** button in Fig. 10-6 to set the play window information.



Play window resolution

● Auto

Width: 720

Height: 480

○ Manual (Customized Resolution)

Width: 720

Height: 480

Fig. 10-17 Play window information

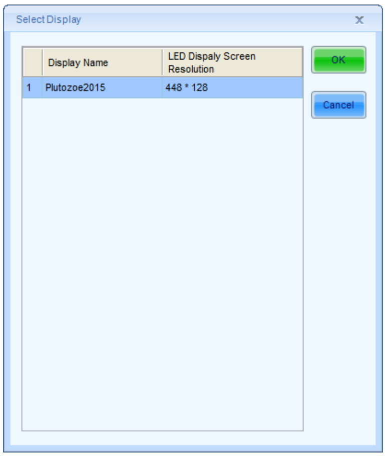
Play window resolution:

- **Auto**: Width and Height can adapt to the display automatically.
- **Customized size:** Must be set according to the actual size of the display.

Select Display: Select display from the display list, to read the size of the client display directly.

Select Display operating steps:

a) Click **Select Display** in Fig. 10-17 to enter display list.



	Display Name	LED Dispaly Screen Resolution
1	Plutozoe2015	448 * 128

Fig. 10-18 Read display size of specific client

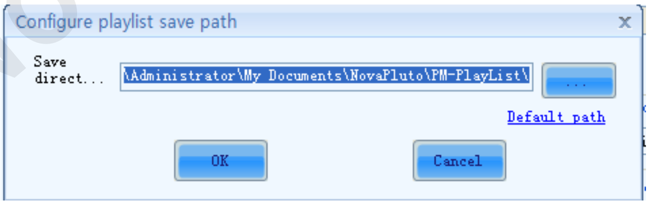
b) Select specific display, and click OK. The software will read the size of the client display directly.

10.2.4 Configure Playlist Directory

After clicking **save** in playlist creating page, the playlist will be automatically saved to default directory (factory default: My Documents\NovaPluto\ PM-PlayList). The user can configure the directory of playlist. Re-configuration of playlist directory might cause unsuccessful playlist publishing, therefore, users are recommended to read the contents of this section carefully.

Operating steps of configure playlist directory:

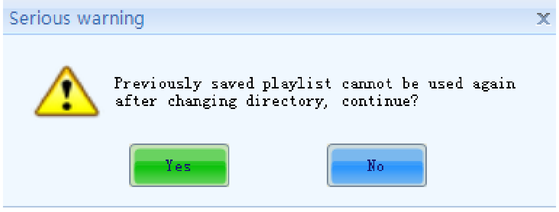
1) Click **Configuration** button in the main interface of PlutoManager. The following window will pop up:



Save direct... \Administrator\My Documents\NovaPluto\PM-PlayList\

Fig. 10-19 Configure playlist directory

2) Click ..., warning window will pop up:



Previously saved playlist cannot be used again after changing directory, continue?

Fig. 10-20 Playlist directory changing warning

“Previously saved playlist cannot be used again after changing directory” means after the directory is changed, clicking Open button will lead to the new directory to search for playlist. The playlists previously saved in the default directory will no longer be opened, therefore cannot be used. So users are recommended to configure directory before saving playlist.

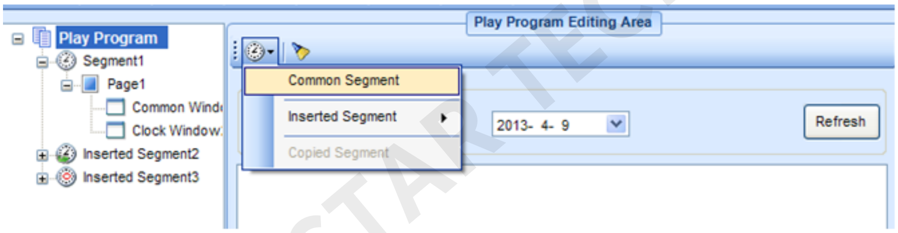
3) Click Yes to choose a new directory. And then click OK. New directory will be configured successfully.

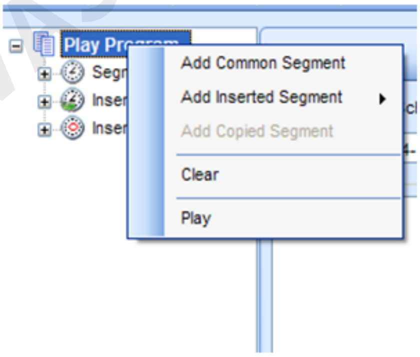
10.2.5 Edit Play Program

10.2.5.1 Edit Segment

1) Create

Click the button on the toolbar of **Play Program Editing Area**, or right-click on the **Play Program** Node, or right-click on the screen, a menu pops up shown as Fig.10-20 for adding new segment.


Play Program
Segment1
Page1
Common Wind
Clock Window
Inserted Segment2
Inserted Segment3
Play Program Editing Area
Common Segment
Inserted Segment
Copied Segment
2013- 4- 9
Refresh


Play Program
Segm
Inser
Inser
Add Common Segment
Add Inserted Segment
Add Copied Segment
Clear
Play

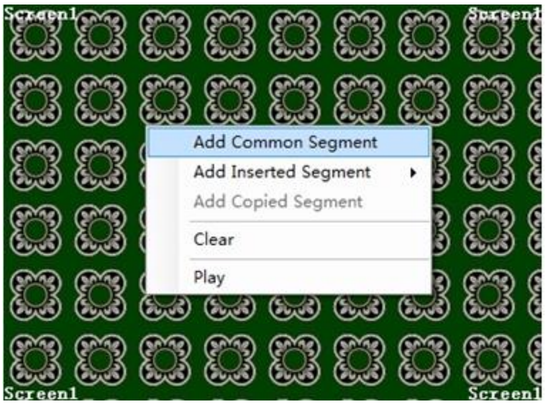
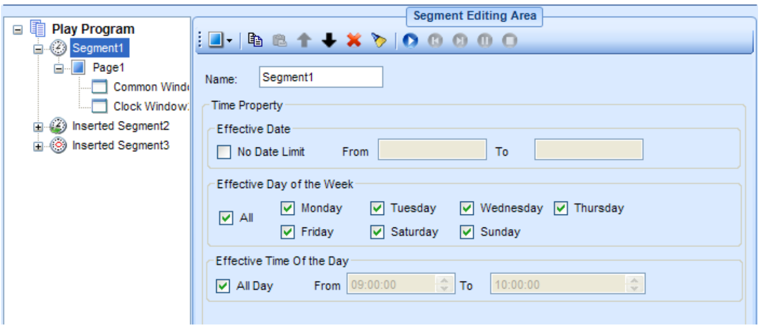

Screen1
Screen1
Add Common Segment
Add Inserted Segment
Add Copied Segment
Clear
Play
Screen1
Screen1

Fig. 10-21 Add segment

2) Editing Properties of Segment

You can edit the properties at the **Segment Editing Area** after adding the common segment or inserted segment. Shown as below.


Play Program
Segment1
Page1
Common Wind
Clock Window
Inserted Segment2
Inserted Segment3
Segment Editing Area

Name: Segment1

Time Property

Effective Date

☐ No Date Limit From To

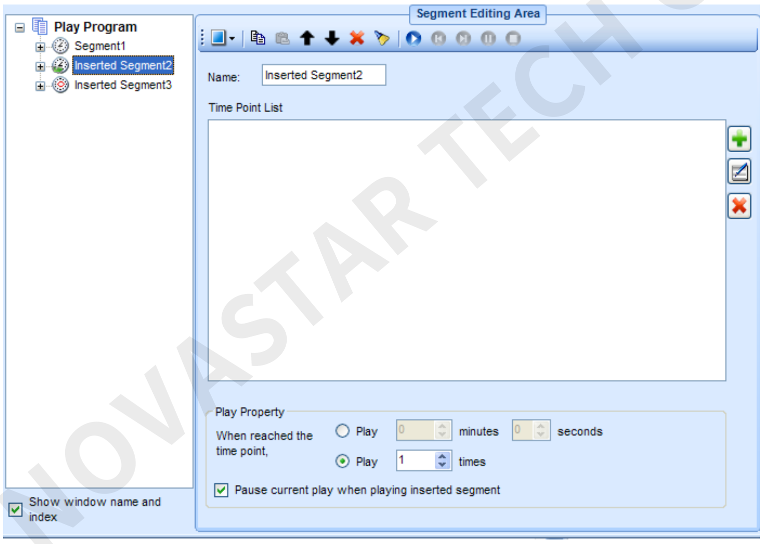
Effective Day of the Week

☑ All ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Effective Time Of the Day

☑ All Day From 09:00:00 To 10:00:00

Fig. 10-22 Properties page of common segment


Play Program
Segment1
Inserted Segment2
Inserted Segment3
Segment Editing Area

Name: Inserted Segment2

Time Point List

Play Property

When reached the time point,

○ Play 0 minutes 0 seconds

● Play 1 times

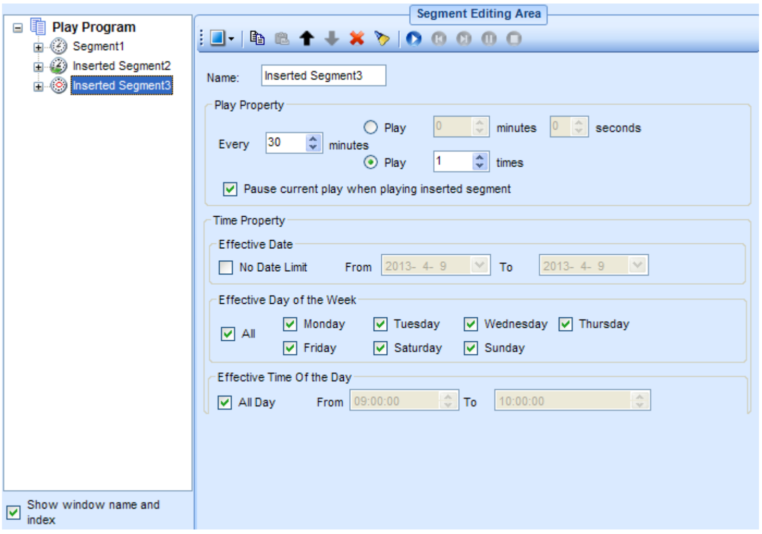
☑ Pause current play when playing inserted segment

☑ Show window name and index

Fig. 10-23 Properties page of timing inserted segment

You can add one or more playing time point for the timing inserted segment.

For inserted segment, if **Pause current play when playing inserted segment** is selected, the current common segment play (If has) would be paused and hide if begin to play inserted segment, otherwise, the inserted segment and the current common segment would be played together.



Play Program
Segment1
Inserted Segment2
Inserted Segment3
Segment Editing Area

Name: Inserted Segment3

Play Property

Every 30 minutes

○ Play 0 minutes 0 seconds

● Play 1 times

☑ Pause current play when playing inserted segment

Time Property

Effective Date

☐ No Date Limit From 2013- 4- 9 To 2013- 4- 9

Effective Day of the Week

☑ All ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

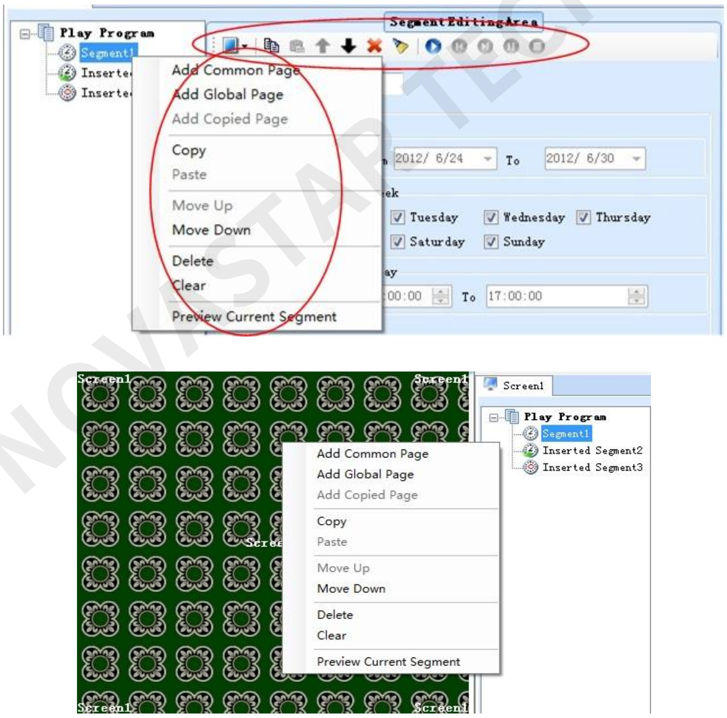
Effective Time Of the Day

☑ All Day From 09:00:00 To 10:00:00

☑ Show window name and index

Fig. 10-24 Properties page of cycle inserted segment

Use the toolbar on the right or right-click menu, you can copy, paste, move or delete the selected segment. The toolbar and menu is shown as below.



Play Program
Segment1
Inserte
Inserte
SegmentEditingArea
Add Common Page
Add Global Page
Add Copied Page
Copy
Paste
Move Up
Move Down
Delete
Clear
Preview Current Segment
2012/ 6/24
To
2012/ 6/30
Tuesday
Wednesday
Thursday
Saturday
Sunday
00:00
To
17:00:00
Screen1
Screen1
Play Program
Segment1
Inserted Segment2
Inserted Segment3
Add Common Page
Add Global Page
Add Copied Page
Copy
Paste
Move Up
Move Down
Delete
Clear
Preview Current Segment

Fig. 10-25 Menu of segment

10.2.5.2 Page Editing

1) **Create a new page**

Click the button on the toolbar at **Segment Editing Area** to add a **Common Page** or **Global Page**.

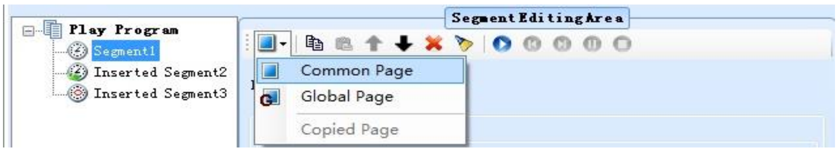
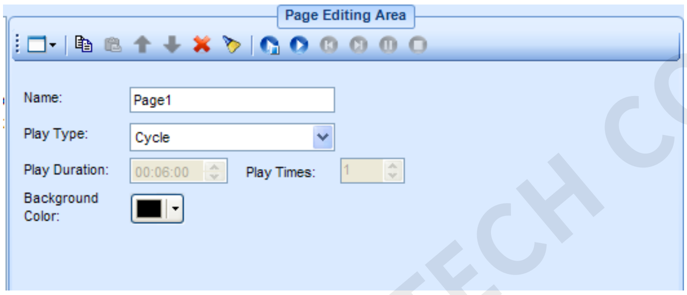

Play Program
Segment1
Inserted Segment2
Inserted Segment3
Segment Editing Area
Common Page
Global Page
Copied Page

Fig. 10-26 Add page

2) Properties Setting

The properties of the added page can be set through the property panel. Shown in Fig. 10-27 is the property panel.


Page Editing Area

Name: Page1

Play Type: Cycle

Play Duration: 00:06:00 Play Times: 1

Background Color:

Fig. 10-27 Properties of page

There are three options for Play Type, **Cycle**, **Specific Times** and **Specific Duration**. If Play Type is set to be **Cycle**, this page will be shown repeatedly; if **Specific Duration**, NovaStudio2012 will shift to the next page after showing this page for the time specified by **Play Duration**; if **Specific Times**, NovaStudio2012 will shift to the next page after all the play windows finish playing their media sources repeatedly for N times (N is specified by **Play Times**).

Area of the page that is not covered by windows will show the background picture or color, as shown in Fig. 10-28.

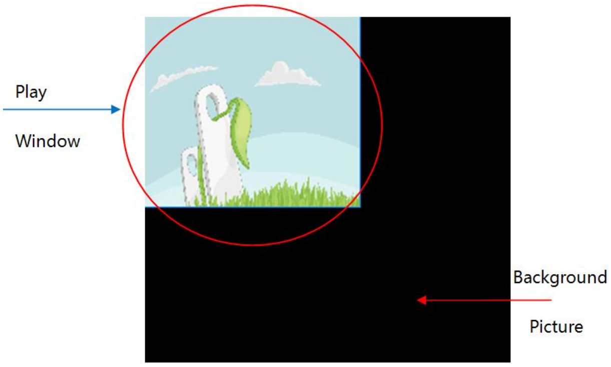
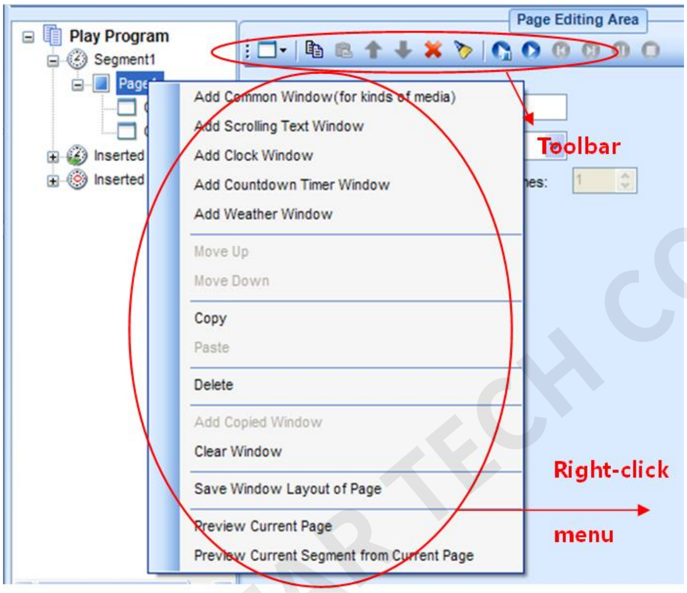

Play
Window
Background
Picture

Fig. 10-28 background with background picture

The play type is only **Cycle** for global page. The global page will be always playing during the segment playing.

Use the toolbar on the right or right-click menu, you can copy, paste, move or delete the selected page. The toolbar and menu is shown.


Page Editing Area
Play Program
Segment1
Page1
Inserted
Inserted
Add Common Window(for kinds of media)
Add Scrolling Text Window
Add Clock Window
Add Countdown Timer Window
Add Weather Window
Move Up
Move Down
Copy
Paste
Delete
Add Copied Window
Clear Window
Save Window Layout of Page
Preview Current Page
Preview Current Segment from Current Page
Toolbar
Right-click
menu

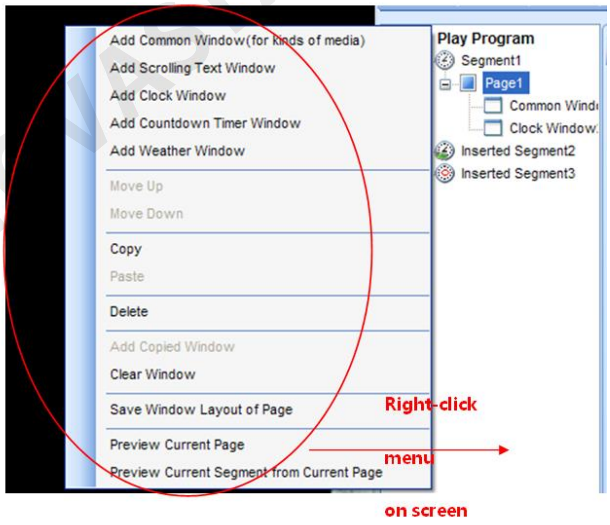

Add Common Window(for kinds of media)
Add Scrolling Text Window
Add Clock Window
Add Countdown Timer Window
Add Weather Window
Move Up
Move Down
Copy
Paste
Delete
Add Copied Window
Clear Window
Save Window Layout of Page
Preview Current Page
Preview Current Segment from Current Page
Play Program
Segment1
Page1
Common Wind
Clock Window
Inserted Segment2
Inserted Segment3
Right-click
menu
on screen

Fig. 10-29 Menu of page

10.2.5.3 Window Editing

1) Create a new window

After adding a page, you should add windows to the page. For example, click the button shown in Fig. 10-30 to add a common window to the page.

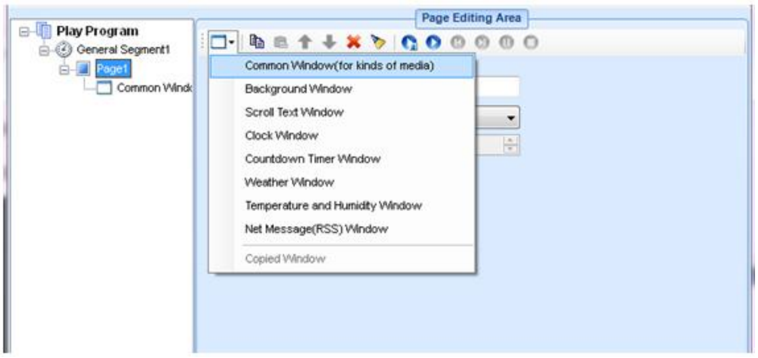

Play Program
General Segment1
Page1
Common Wind
Page Editing Area
Common Window(for kinds of media)
Background Window
Scroll Text Window
Clock Window
Countdown Timer Window
Weather Window
Temperature and Humidity Window
Net Message(RSS) Window
Copied Window

Fig. 10-30 Add window to page

The newly added window will be shown on the computer display after the add operation, as shown in Fig. 10-31.

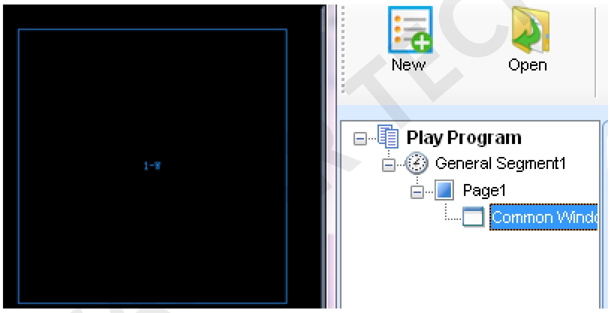
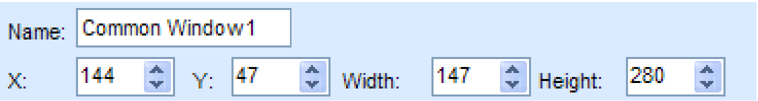

New
Open
Play Program
General Segment1
Page1
Common Windo

Fig. 10-31 Added window

2) Window position and size setting

The position and size of a newly added window may need to be reset as the default values are unlikely to meet the requirements. These values can be reset directly by using the tool provided in NovaStudio2012, as shown in Fig. 10-31. A more intuitive way to reset these values is to use the mouse. Click on the window to put focus on it and then set its position and size by drawing, pulling and squeezing, as shown in Fig. 10-32. The arrow keys and their combination with Shift keys can also be used for the position and size setting of a window.



Name: Common Window1

X: 144 Y: 47 Width: 147 Height: 280

Fig. 10-32 tools for window position and size setting

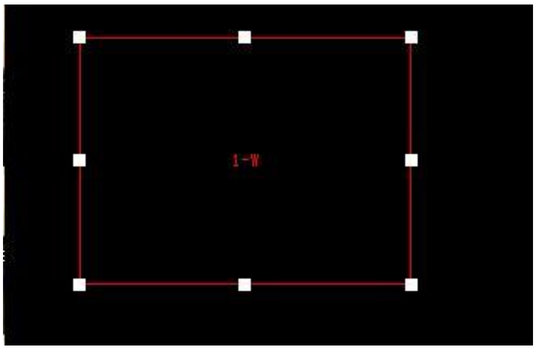


Fig. 10-33 a focused common window

To show all the windows of a page, just select the page from the page list. This could be very helpful for windows layout adjustment.

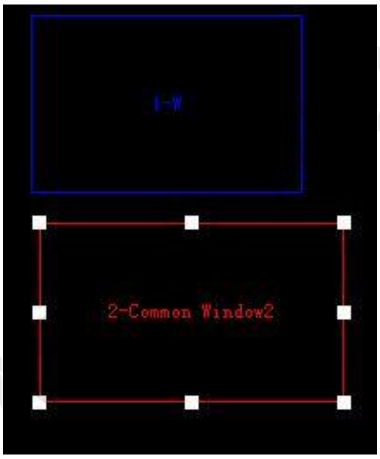
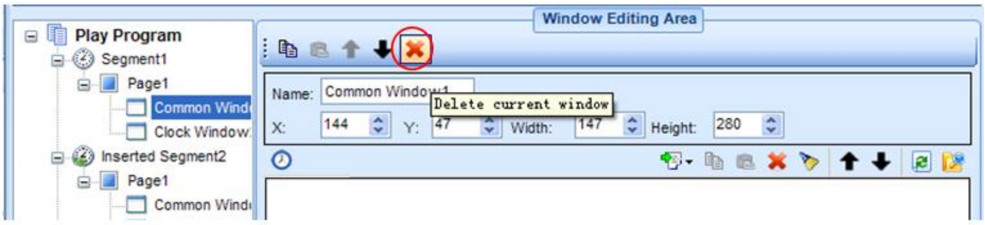

1-W
2-Common Window2

Fig. 10-34 showing all windows of a page

3) Delete a window

To delete a specified window, click the circled **Delete** button, as shown in Fig.10-35.


Play Program
Segment1
Page1
Common Wind
Clock Window
Inserted Segment2
Page1
Common Wind
Window Editing Area
Delete current window

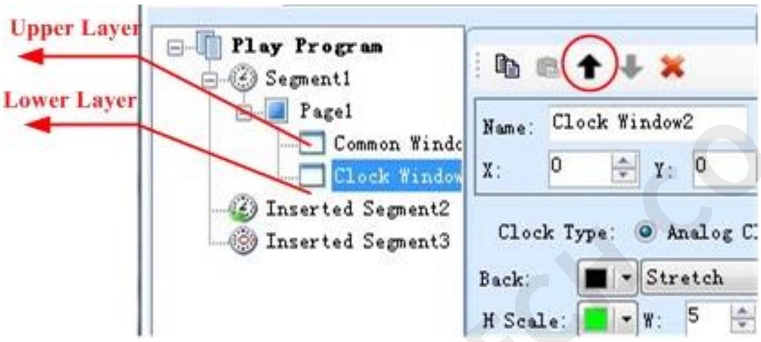
Name: Common Window1
X: 144 Y: 47 Width: 147 Height: 280

Fig. 10-35 Delete window

4) Move a window

For overlapped windows in the same page, the one at front will cover those under it.

Suppose a common window and a clock window is added to a page at the same position of (0, 0, 200, 200) . The common window will cover the clock window when this page is on shown if the common window is in front of the clock window in the window list. To avoid the clock window being covered by the common window, move it to the front of the common window or move the common window to the back of it. The circled arrow buttons in Fig. 10-36 are used to move a window forward or backward.

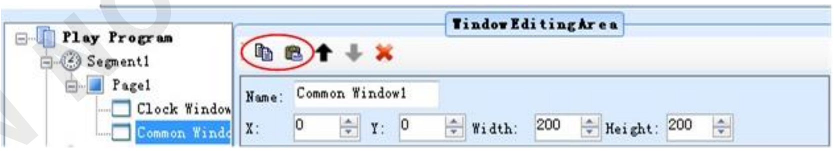

Upper Layer
Lower Layer
Play Program
Segment1
Page1
Common Windo
Clock Window
Inserted Segment2
Inserted Segment3

Name: Clock Window2
X: 0
Y: 0
Clock Type: ● Analog C
Back: Stretch
H Scale:
W: 5

Fig. 10-36 Move window

5) Duplicate a window

To duplicate a window, select the source window, click the Copy button and then click the Paste. Circled in Fig as below are the Copy button and the Paste button.


Play Program
Segment1
Page1
Clock Window
Common Windo
WindowEditingArea

Name: Common Window1
X: 0
Y: 0
Width: 200
Height: 200

Fig. 10-37 the Copy button and the Paste button

The right-click menus on the window node and on the window zone in the screen are also supported to edit the window, as shown below.

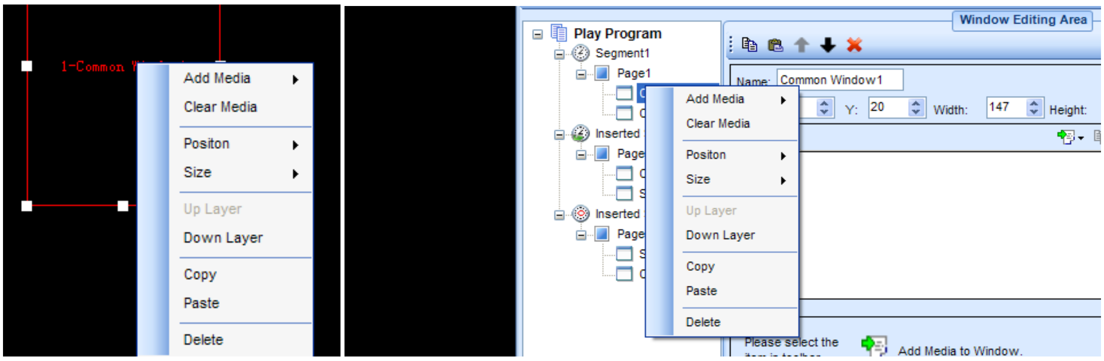

1-Common Window
Add Media
Clear Media
Positon
Size
Up Layer
Down Layer
Copy
Paste
Delete
Play Program
Segment1
Page1
Inserted
Window Editing Area
Name: Common Window1
Y: 20
Width: 147
Height:
Please select the item in toolbar
Add Media to Window.

Fig. 10-38 Right-click menu of window

10.2.5.4 Media Editing

Media editing will be illustrated with a common window as an example.

1) Add a media

Media sources of a media type that is supported by the Software can be added to a common window for showing. Click the button "Add Media" to access the drop-down menu of media types. Select the corresponding item to add a media source of that type to the common window.

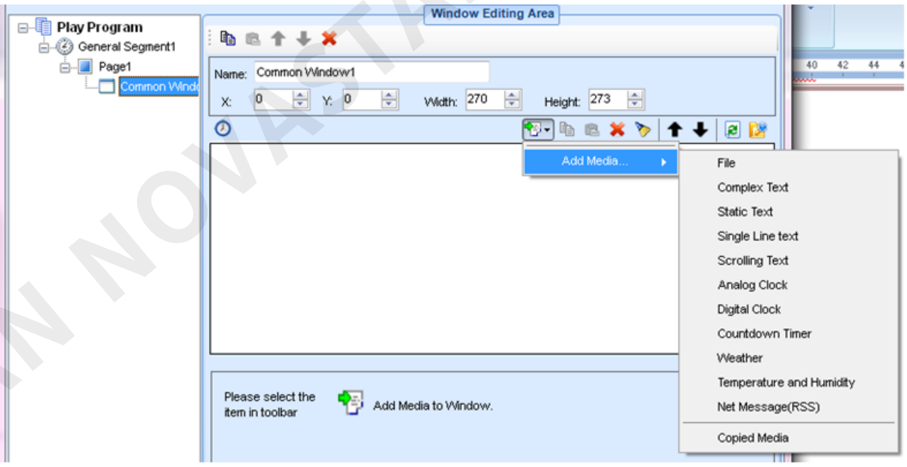
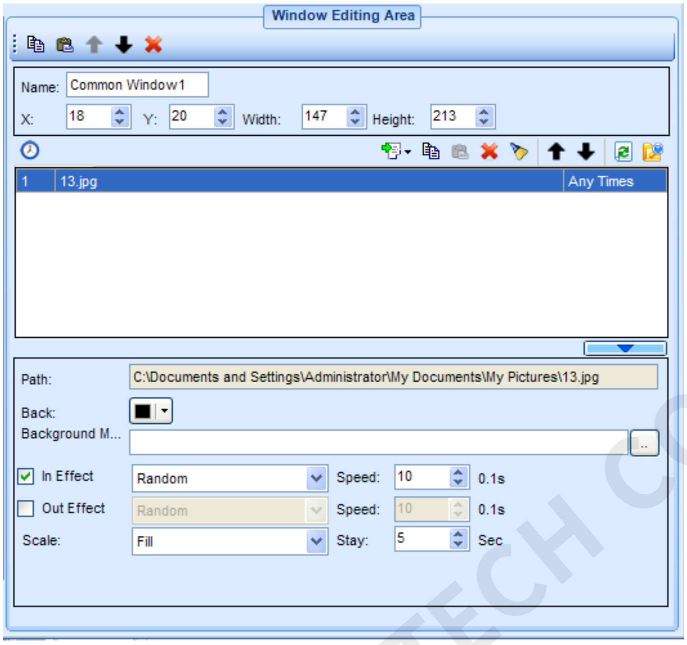

Play Program
General Segment1
Page1
Common Window1
Window Editing Area
Name: Common Window1
X: 0
Y: 0
Width: 270
Height: 273
Add Media...
File
Complex Text
Static Text
Single Line text
Scrolling Text
Analog Clock
Digital Clock
Countdown Timer
Weather
Temperature and Humidity
Net Message(RSS)
Copied Media
Please select the item in toolbar
Add Media to Window.

Fig. 10-39 Add media

2) Media properties setting

Properties of a media source can be set is related to the type of the media source. Refer to **<Media Types Supported by Pluto Manager>** for information about the settable properties of a certain type of media.

Settable properties of the selected media item in the media source list will be shown on the property panel, as shown in Fig. 10-40. Modify the property settings of a media item through the property panel if required.



Name: Common Window1
X: 18 Y: 20 Width: 147 Height: 213

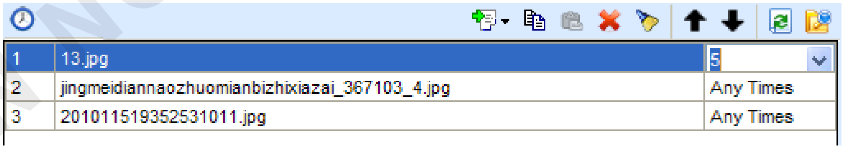
1	13.jpg	Any Times

Path: C:\Documents and Settings\Administrator\My Documents\My Pictures\13.jpg
Back:
Background M...
☑ In Effect: Random Speed: 10 0.1s
☐ Out Effect: Random Speed: 10 0.1s
Scale: Fill Stay: 5 Sec

Fig. 10-40 Properties page of media

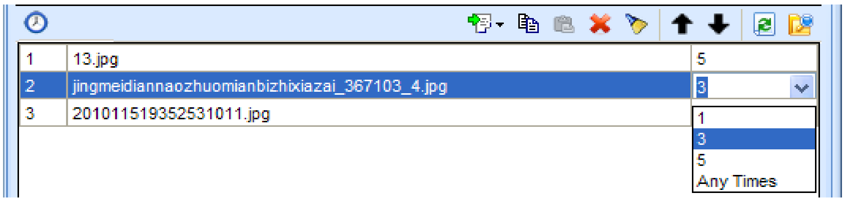
3) Set play times of media

Select the media in the list, then double click the **Play Times Grid** to change the play times: You can manually enter a new number or select the existing number in the drop-down, as shown.



1	13.jpg	5
2	jingmeidiannaozhuomianbizhixiazai_367103_4.jpg	Any Times
3	201011519352531011.jpg	Any Times

(1)



1	13.jpg	5
2	jingmeidiannaozhuomianbizhixiazai_367103_4.jpg	3
3	201011519352531011.jpg	

(2)

Fig. 10-41 Change play times of media

The media scheduling is related with the play type of current page, described as follows.

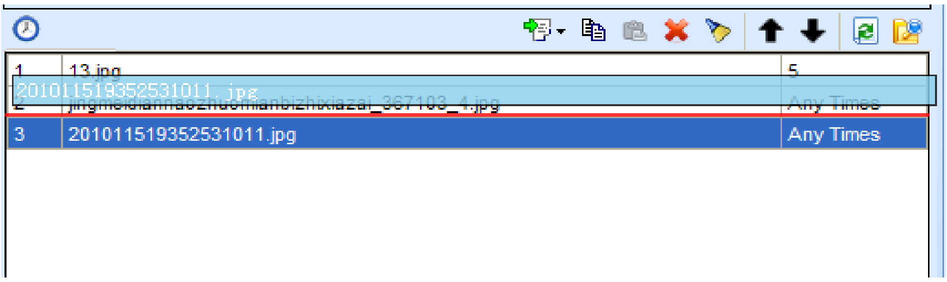
- If there is three media A, B and C of one common window, the corresponding play time is 1, 2 and Any Times, the play order is as follows:
  - The play type of page is **Cycle**： A B C B C C C C……
  - The play type of page is **Specific Times as 2**：A B C B | A B C B
  - The play type of page is **Specific Duration**：A B C B C C C C……
- If there is three media A, B and C of one common window, the corresponding play time is 1, 2 and 3, the play order is as follows:
  - The play type of page is **Cycle**： A B C B C C | A B C B C C | A B C B C C |……|……
  - The play type of page is **Specific Times as 2**：A B C B C C | A B C B C C
  - The play type of page is **Specific Duration**：A B C B C C | A B C B C C |……|……

4) Preview a media

Click a media item in the media list to preview it in the current window (in this case, the current window is a common window). New property settings will take effect immediately even they are set during the previewing. The first media source in the media list of a window will be automatically previewed when the window is selected.

5) Move a media item

Use the ⬆ ⬇ buttons to move a media item in the media list forward or backward and thus change the play order of the media sources. Mouse can also be used to move media items. The red line in Fig. 10-42 indicates the new position of the mouse item dragged by the mouse.



1	13.jpg	5
2	jingmeidiannaozhuomianbizhixiazai_367103_4.jpg	Any Times
3	201011519352531011.jpg	Any Times

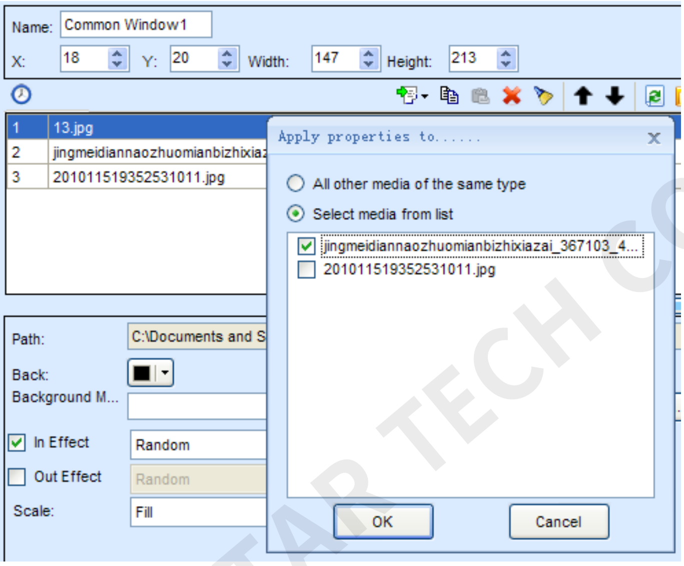
Fig. 10-42 move a media item by mouse

6) The copy and paste of media

Click button 📋 to copy the selected media, and click button 📋 to insert the copied media after the selected media.

7) Apply the media properties to others

Select a media, and then click button ⟳ , choose the media to apply to in the pop up dialog.



Name: Common Window1

X: 18 Y: 20 Width: 147 Height: 213

1	13.jpg
2	jingmeidiannaozhuomianbizhixiaz
3	201011519352531011.jpg

Path: C:\Documents and S

Back:

Background M...

☑ In Effect Random

☐ Out Effect Random

Scale: Fill

Apply properties to......

○ All other media of the same type

● Select media from list

☑ jingmeidiannaozhuomianbizhixiazai_367103_4...

☐ 201011519352531011.jpg

Fig. 10-43 Apply properties to media

Otherwise, the media operation also provides the corresponding right-click menu, as shown.

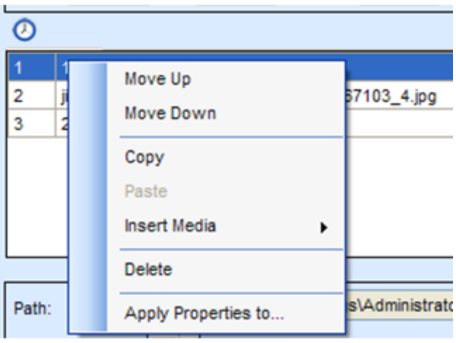
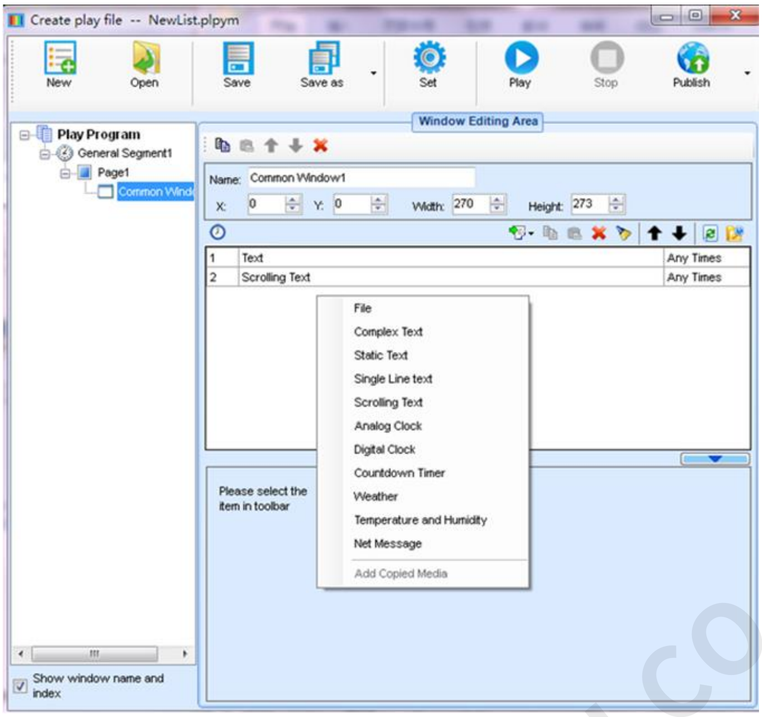


Fig. 10-44 Right-click menu of selected media



Create play file -- NewList.plpym
New
Open
Save
Save as
Set
Play
Stop
Publish
Play Program
General Segment1
Page1
Common Wind
Window Editing Area
Please select the item in toolbar
File
Complex Text
Static Text
Single Line text
Scrolling Text
Analog Clock
Digital Clock
Countdown Timer
Weather
Temperature and Humidity
Net Message
Add Copied Media
Show window name and index

Name: Common Window1

X: 0 Y: 0 Width: 270 Height: 273

1	Text	Any Times
2	Scrolling Text	Any Times

☑ Show window name and index

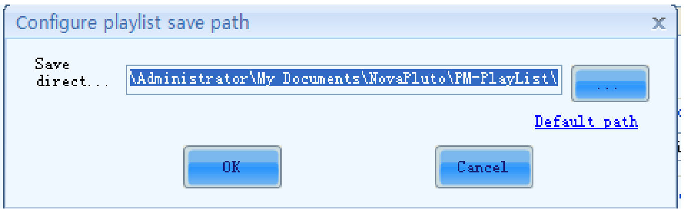
Fig. 10-45 Right-click menu of blank zone

10.2.5.5 Configure Play-Program directory

After clicking **save** in Play-Program creating page, the Play-Program will be automatically saved to default directory (factory default: My Documents\NovaPluto\ PM-Play-Program). The user can configure the directory of Play-Program. Re-configuration of Play-Program directory might cause unsuccessful Play-Program publishing, therefore, users are recommended to read the contents of this section carefully.

Operating steps of configure Play-Program directory:

1) Click **Configuration** button in the main interface of PlutoManager. The following window will pop up:

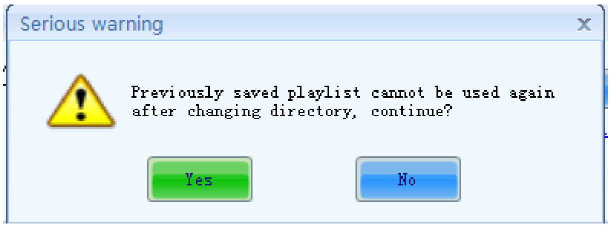


Configure playlist save path
x
...
Default path
OK
Cancel

Save direct... \Administrator\My Documents\NovaPluto\PM-PlayList\

Fig. 10-46 Configure Play-Program directory

2) Click ..., warning window will pop up:


Serious warning
Yes
No

Previously saved playlist cannot be used again after changing directory, continue?

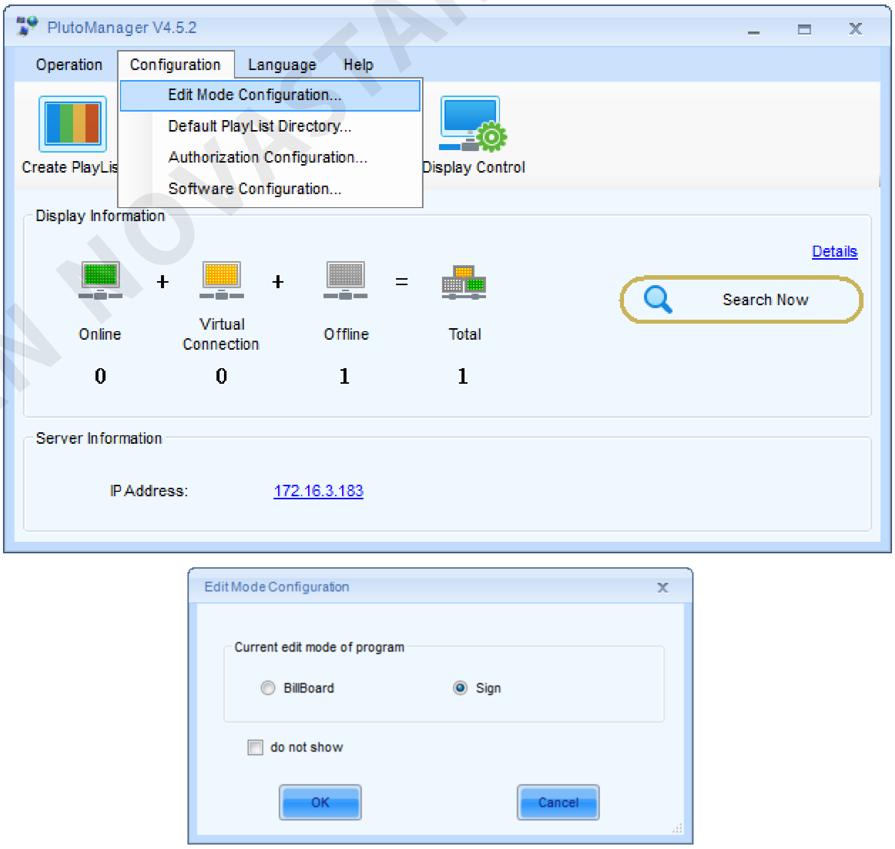
Fig. 10-47 Play-Program directory changing warning

⚠	"Previously saved Play-Program cannot be used again after changing directory" means after the directory is changed, clicking Open button will lead to the new directory to search for Play-Program. The Play-Programs previously saved in the default directory will no longer be opened, therefore cannot be used. So users are recommended to configure directory before saving Play-Program.

3) Click **Yes** to choose a new directory. And then click **OK**. New directory will be configured successfully.

10.3 Making Sign List

Edit mode needs to be configured first. The operating steps are: click "Configuration" →"Edit Mode Configuration"→"Sign"→ "OK".


PlutoManager V4.5.2
Operation
Configuration
Language
Help
Edit Mode Configuration...
Default PlayList Directory...
Authorization Configuration...
Software Configuration...
Create PlayLis
Display Control
Display Information
Details
Online
Virtual Connection
Offline
Total
Search Now
Server Information
Edit Mode Configuration
OK
Cancel

Online 0 + Virtual Connection 0 + Offline 1 = Total 1

IP Address: 172.16.3.183

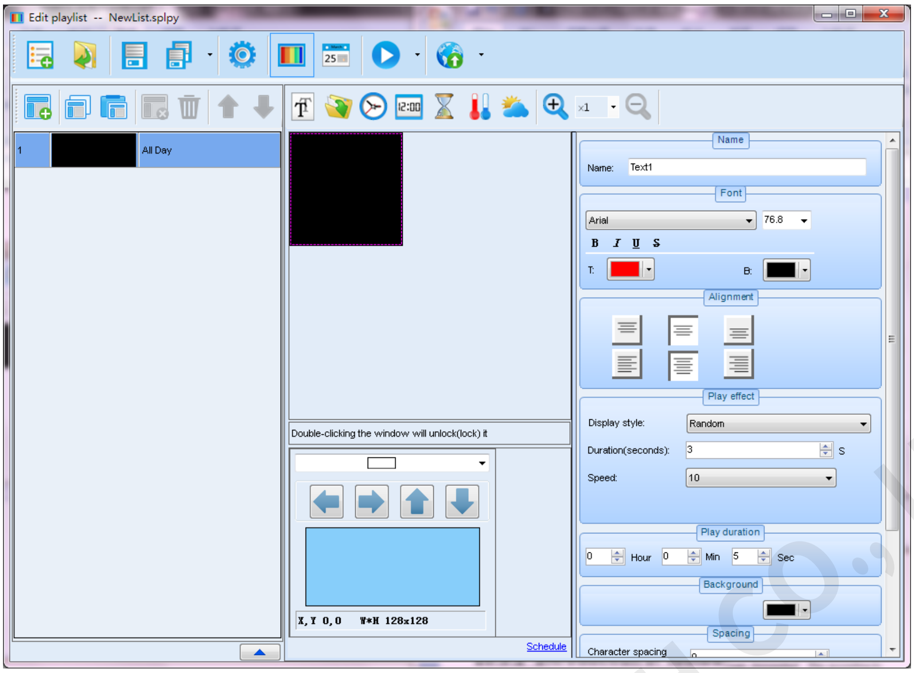
Current edit mode of program

○ BillBoard ● Sign

☐ do not show

Fig. 10-48 Edit Mode Configuration

Begin to make Sign list according to the following steps.



Edit playlist -- NewList.splpy

1 All Day

Double-clicking the window will unlock(lock) it

X,Y 0,0 W*H 128x128

Schedule

Name: Text1

Font: Arial 76.8

Display style: Random

Duration(seconds): 3 S

Speed: 10

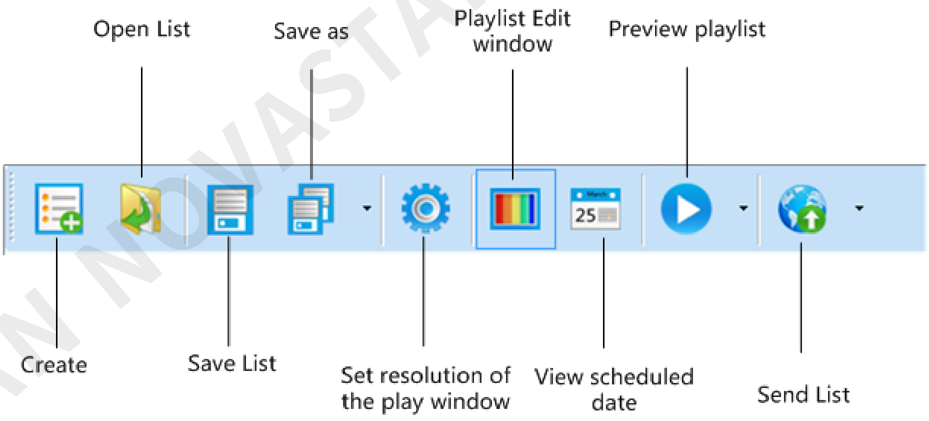
Play duration: 0 Hour 0 Min 5 Sec

Character spacing

Name
Font
B I U S
T:
B:
Alignment
Play effect
Background
Spacing

Fig. 10-49 Sign play list edit page

10.3.1 Introduction of Toolbar

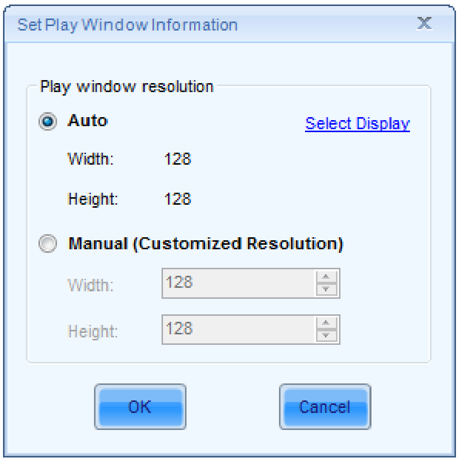

Open List
Save as
Playlist Edit window
Preview playlist
Create
Save List
Set resolution of the play window
View scheduled date
Send List

Set play window

Click ⚙ to set play window.

Method one: check "Auto", click "Select Display" to select the client, and direct read the size of the load display screen of the client and take it as the size of the play window.

Method two: check "Manual (Custom size)", and fill in the size of the play window.



Set Play Window Information

Play window resolution

● **Auto** Select Display

Width: 128

Height: 128

○ **Manual (Customized Resolution)**

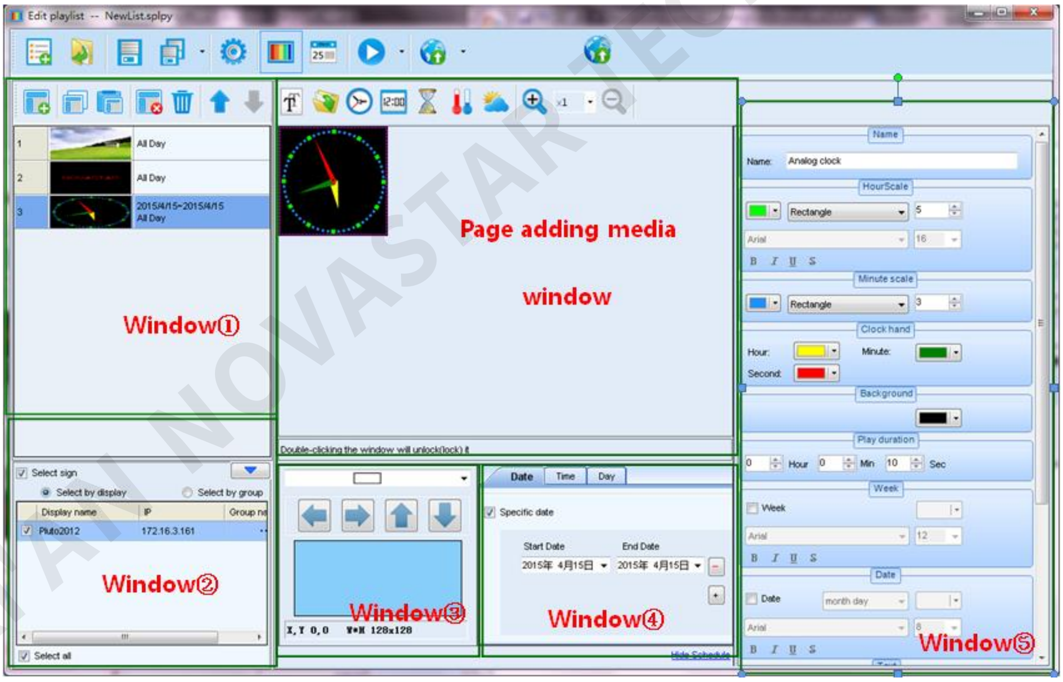
Width: 128

Height: 128

Fig. 10-50 Set Play Window Information

10.3.2 Edit Play List

The edit homepage of Play List is divided into multiple windows, and each window is named according to its function, as shown in the following figure.



Edit playlist -- NewList.splpy
Page adding media
window
Window①
Window②
Window③
Window④
Window⑤
All Day
All Day
2015/4/15~2015/4/15
All Day
Double-clicking the window will unlock(lock) it
Select sign
Select by display
Select by group
Display name
IP
Group na
Pluto2012
172.16.3.161
Select all
X, Y 0,0
W*H 128x128
Date
Time
Day
Specific date
Start Date
End Date
2015年 4月15日
2015年 4月15日
Hide Schedule
Name
Name: Analog clock
HourScale
Rectangle
Minute scale
Clock hand
Hour:
Minute:
Second:
Background
Play duration
Hour
Min
Sec
Week
Date
month day

Fig. 10-51 Page function distribution

Window①: Page adding or deleting, sorting.

Window②: Select a client on the window.

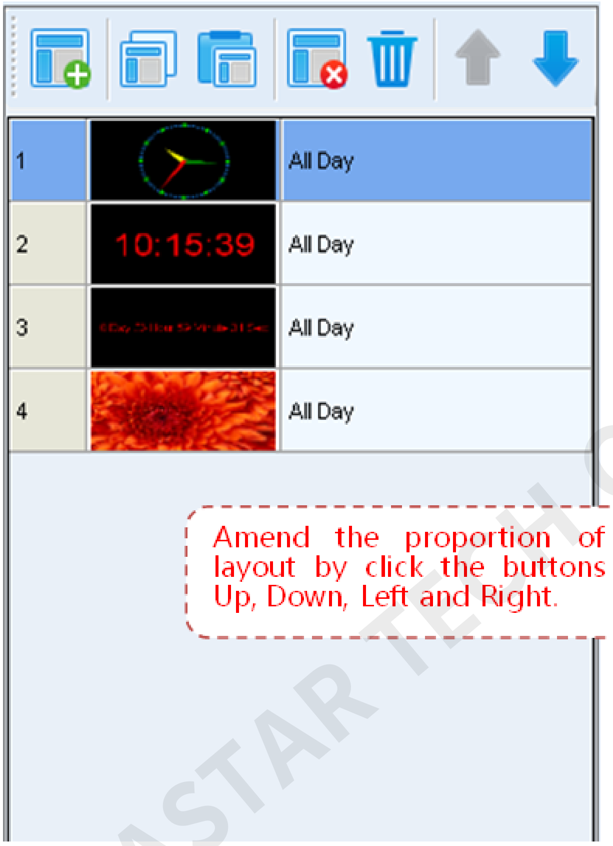
Window③: Page layout.

Window④: Scheduled.

Window⑤: Play and media attribute edit.

1) Window①---Page adding or deleting, sorting window

Click to add the page, select Page Layout at the drop-down box at the right of the screen, and amend the proportion by clicking the buttons Up, Down, Left and Right based on requirements.


1
All Day
2
10:15:39
All Day
3
All Day
4
All Day

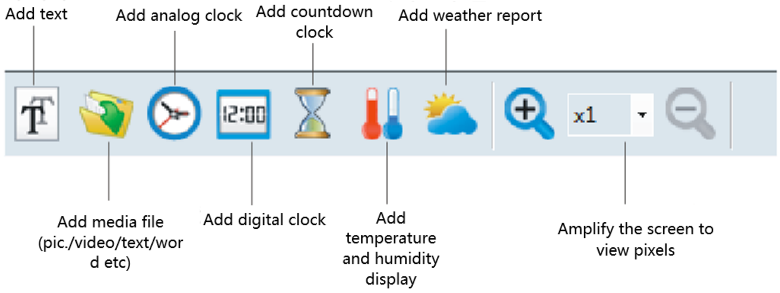
Amend the proportion of layout by click the buttons Up, Down, Left and Right.

Fig. 10-52 Page adding or deleting, sorting, layout window

2) Page adding media window

Select one window of the page, and then click button on the toolbar to add media to the window.

Click to simulate the real display screen to view the distribution situation of pixels.


Add text
Add analog clock
Add countdown clock
Add weather report
x1
Add media file (pic./video/text/word etc)
Add digital clock
Add temperature and humidity display
Amplify the screen to view pixels

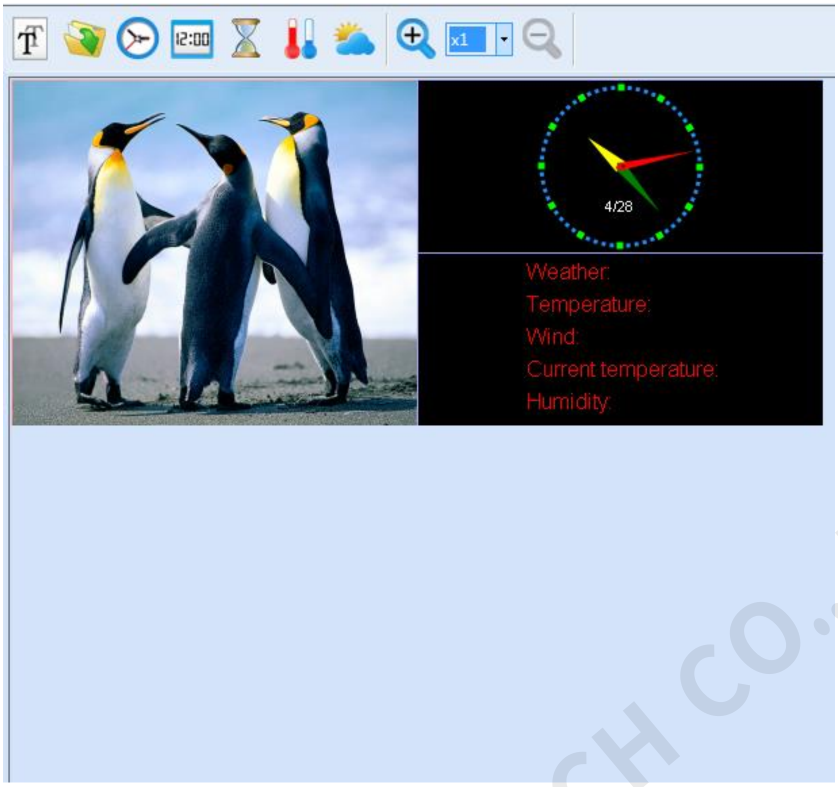

x1
4/28
Weather:
Temperature:
Wind:
Current temperature:
Humidity:

Fig. 10-53 Page adding media window

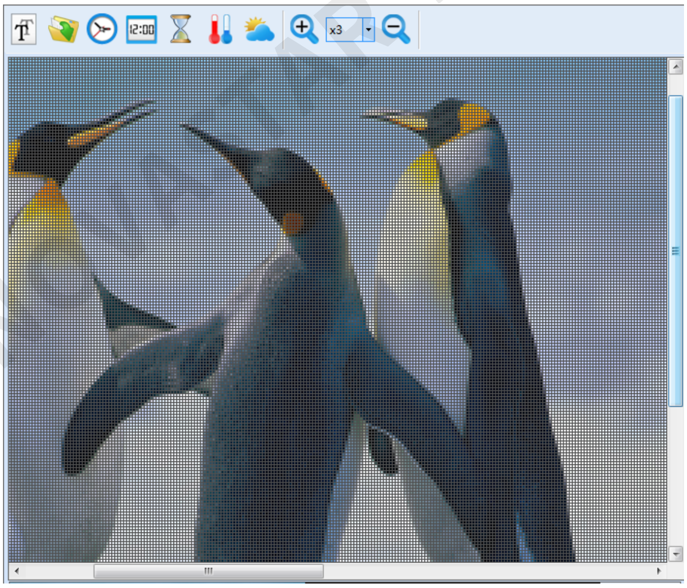


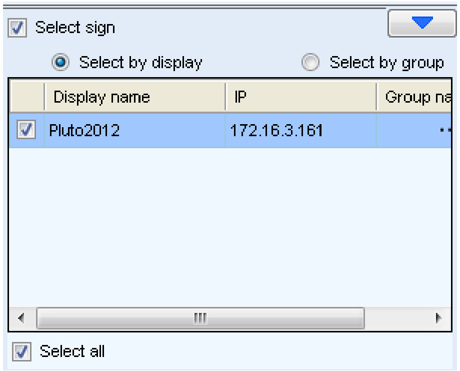
Fig. 10-54 Screen after 3 times of amplification

3) Select Sign

Click ▼, the window for select sign will showing or hiding, Check "Select sign", and then select the display to play the page.

Note: Every page can be played on different clients.

If "Select sign" is not checked, the page can be played on multiple clients.



☑ Select sign

● Select by display ○ Select by group

	Display name	IP	Group na
☑	Pluto2012	172.16.3.161	··

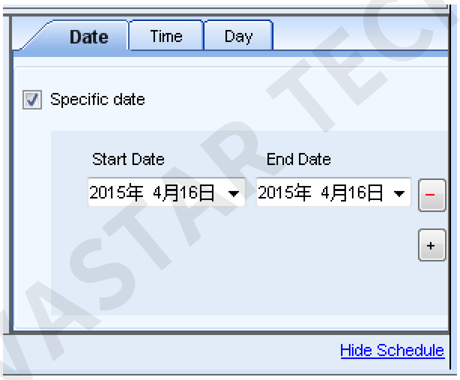
☑ Select all

Fig. 10-55 Select Sign

4) Scheduled

Click Schedule to

a) Check "Scheduled date" to set play date of list, and click + − to increase or decrease the time.



☑ Specific date

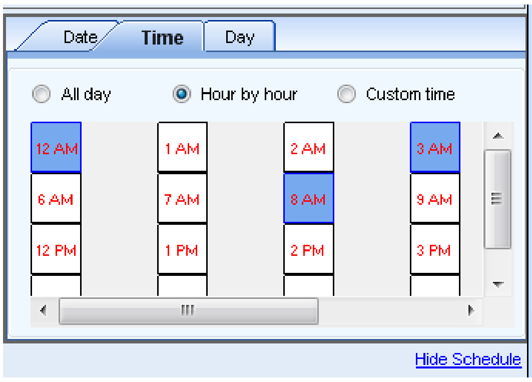
Start Date: 2015年 4月16日

End Date: 2015年 4月16日

Fig. 10-56 Set Scheduled date

b) Click "TIME" to set the play time of List, available options are All day, point-in-point or Time slot.

When "Point-in-point" play is selected, click to select the point-in-time, double click to cancel; the default is to play for one hour from the selected point in time; for example, three points-in-time are selected in the following figure - 12 AM, 3 AM and 8 AM; then the play scheduled dates are: Play from 12 AM to 1 AM; Play from 3 AM to 4 AM; Play from 8 AM to 9 AM.

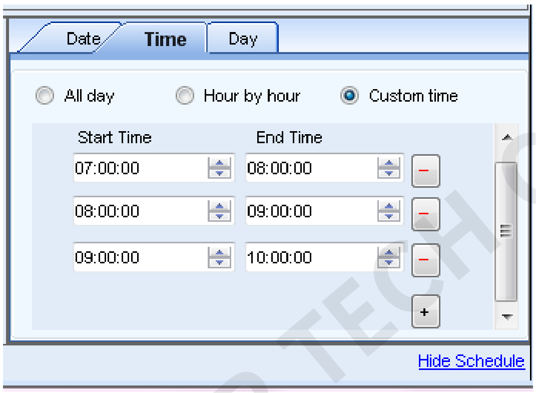

Date
Time
Day
Hide Schedule

○ All day ● Hour by hour ○ Custom time

12 AM	1 AM	2 AM	3 AM
6 AM	7 AM	8 AM	9 AM
12 PM	1 PM	2 PM	3 PM

Fig. 10-57 Set Point-in-time

When "Time slot" play is selected, click + − to increase or decrease the time segments.

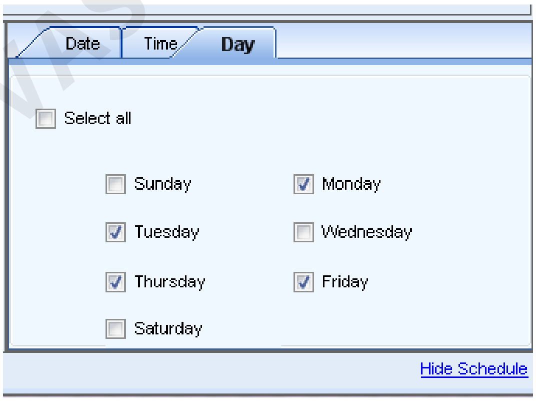

Date
Time
Day
Hide Schedule

○ All day ○ Hour by hour ● Custom time

Start Time	End Time
07:00:00	08:00:00
08:00:00	09:00:00
09:00:00	10:00:00

Fig. 10-58 Set Time slot

c) Click "WEEKDAY" to set the day in the week to play List.


Date
Time
Day
Hide Schedule

☐ Select all

☐ Sunday ☑ Monday

☑ Tuesday ☐ Wednesday

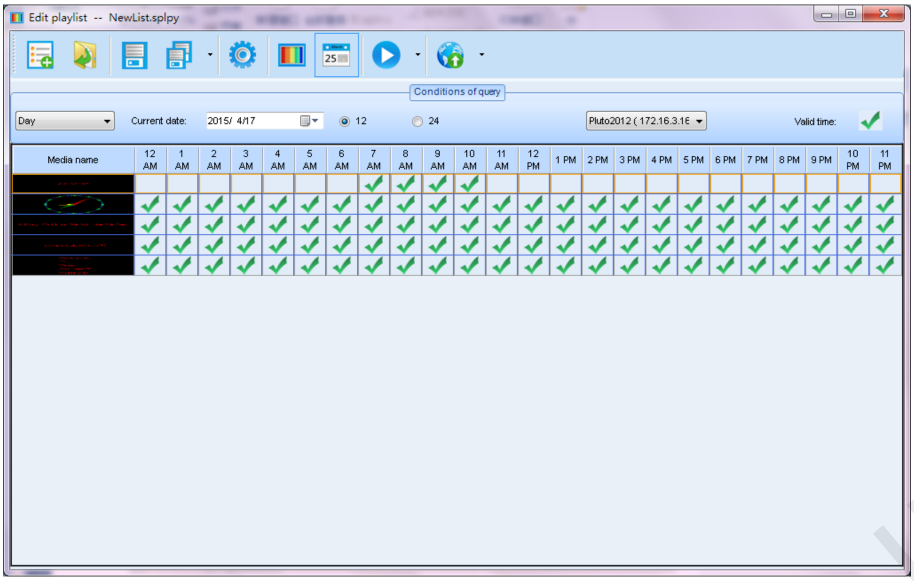
☑ Thursday ☑ Friday

☐ Saturday

Fig. 10-59 Set weekday

d) View Scheduled date

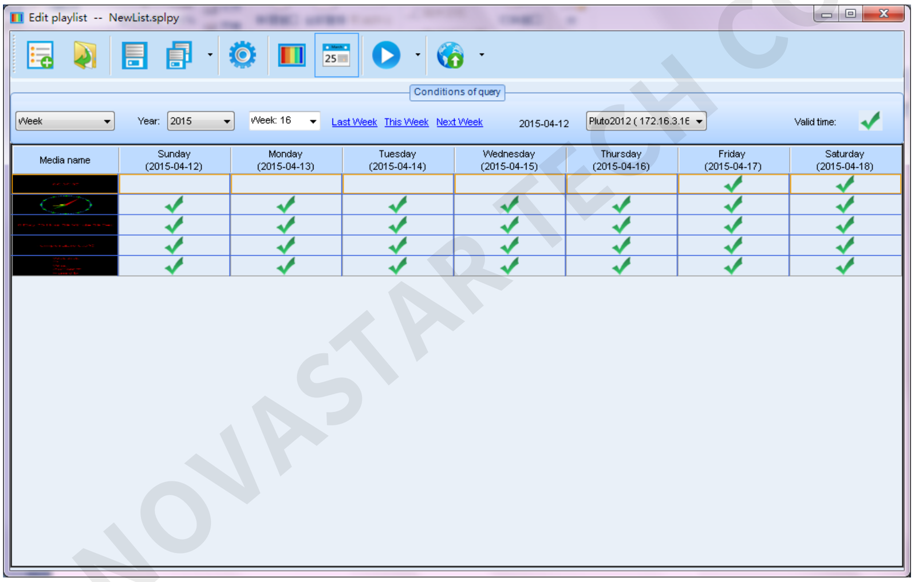
Click 📅 to view the Scheduled date.


Edit playlist -- NewList.splpy
Conditions of query

Day
Current date: 2015/ 4/17
● 12 ○ 24
Pluto2012 (172.16.3.1E
Valid time: ✓

Media name	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
								✓	✓	✓	✓													
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

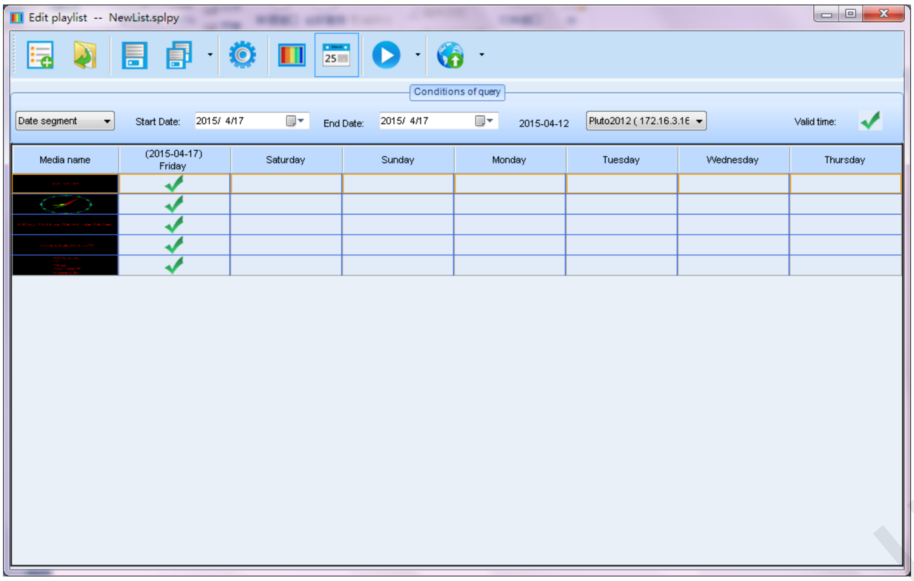
Fig. 10-60 View Scheduled date by day


Edit playlist -- NewList.splpy
Conditions of query
Last Week
This Week
Next Week

Week
Year: 2015
Week: 16
2015-04-12
Pluto2012 (172.16.3.1E
Valid time: ✓

Media name	Sunday (2015-04-12)	Monday (2015-04-13)	Tuesday (2015-04-14)	Wednesday (2015-04-15)	Thursday (2015-04-16)	Friday (2015-04-17)	Saturday (2015-04-18)
						✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓

Fig. 10-61 View Scheduled date by week



Date segment Start Date: 2015/ 4/17 End Date: 2015/ 4/17 2015-04-12 Pluto2012 (172.16.3.1E Valid time: ✓

Media name	(2015-04-17) Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
	✓						
	✓						
	✓						
	✓						
	✓						

Fig. 10-62 View Scheduled date by time segment

5) Play and media attribute edit window

When adding the media, simultaneously set attribute of the media and the play effect at the window.

10.3.3 Sending Play List

Click Send on the toolbar, with the software prompting saving list first, then sending. User operates by following the software prompts.

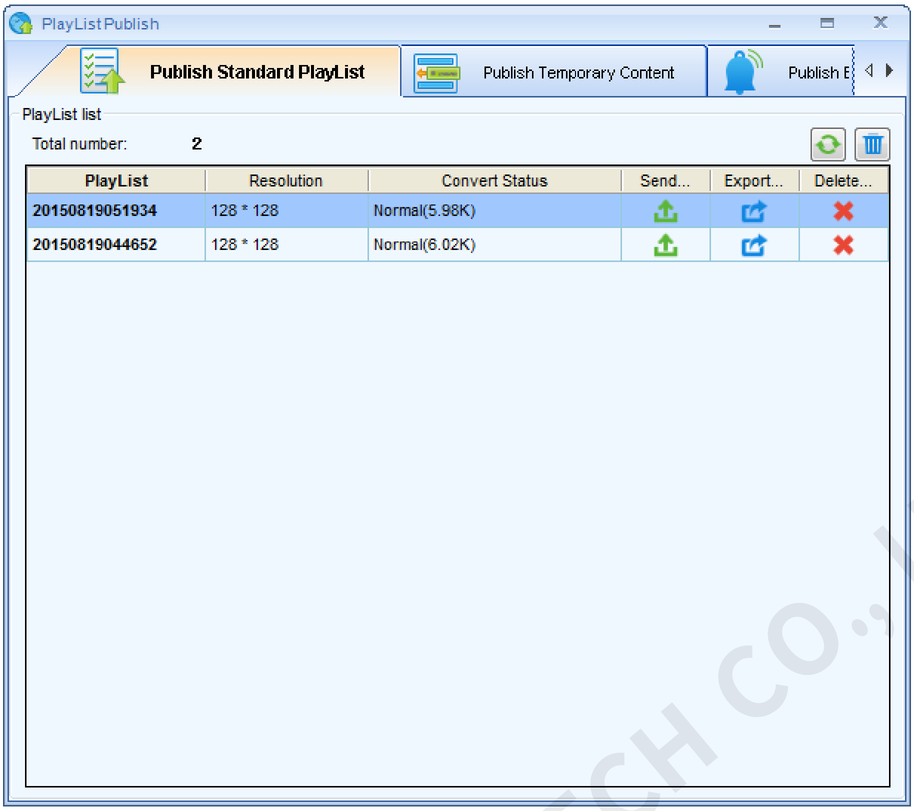
10.4 Publish PlayList

10.4.1 Online Publish

Online publish means publishing Play-Program directly to the client (who’s online) storage space through network.

Operation Steps:

1) Go back to the main interface of PlutoManager. Click **Publish PlayList** button to enter the PlayList Publish page.


PlayListPublish
Publish Standard PlayList
Publish Temporary Content
Publish E
PlayList list

Total number: 2

PlayList	Resolution	Convert Status	Send...	Export...	Delete...
20150819051934	128 * 128	Normal(5.98K)	⬆	↗	✖
20150819044652	128 * 128	Normal(6.02K)	⬆	↗	✖

Fig. 10-63 Play-Program publishing page

Refresh: press to view all finished Play-Programs;

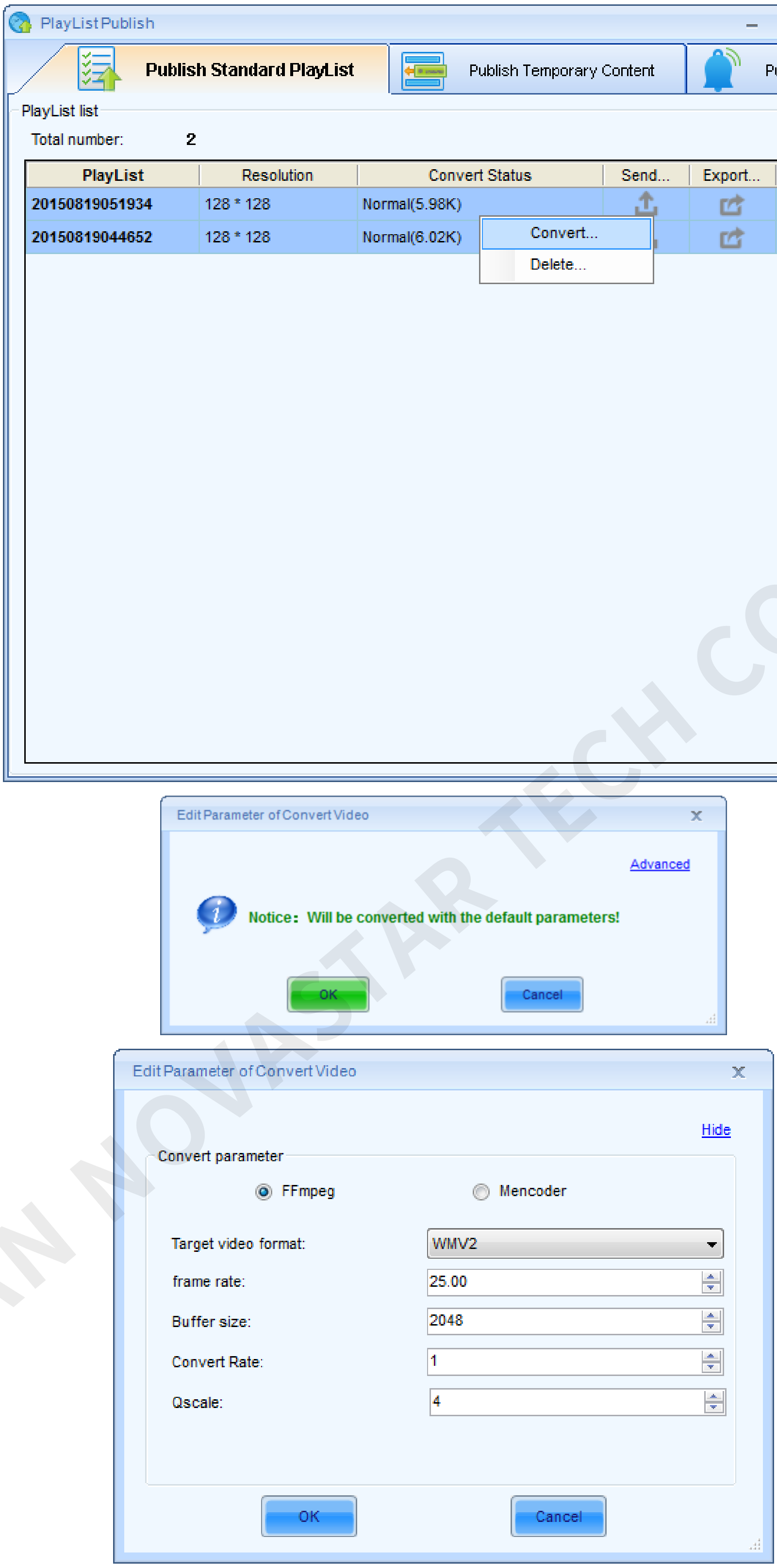
Clear: delete all Play-Programs and files;

Delete: once deleted, all files related to Play-Program will be gone no matter converted or not;

Send: send Play-Program;

Export: export Play-Program to USB disk.

2) Select the Play-Programs you want to convert, press “Ctrl” at same time to select multiple, right click, and select **Convert**. The following window will pop out. click "**Advanced**" You can set the parameters in detail, if no advanced settings, the video will be converted with the default parameters.


PlayListPublish
Publish Standard PlayList
Publish Temporary Content
Publish E
PlayList list
Convert...
Delete...
Edit Parameter of Convert Video
Advanced
OK
Cancel
Edit Parameter of Convert Video
Hide
OK
Cancel

Total number: 2

PlayList	Resolution	Convert Status	Send...	Export...	Delete...
20150819051934	128 * 128	Normal(5.98K)			✖
20150819044652	128 * 128	Normal(6.02K)			✖

Notice：Will be converted with the default parameters!

Convert parameter

● FFmpeg ○ Mencoder

Target video format: WMV2

frame rate: 25.00

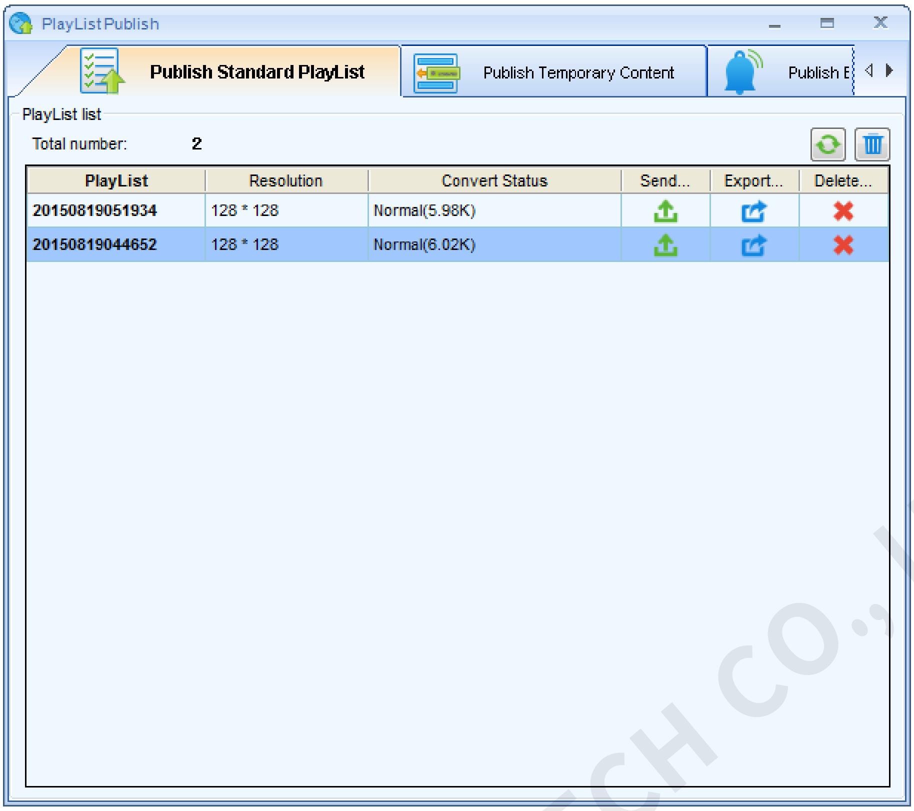
Buffer size: 2048

Convert Rate: 1

Qscale: 4

Fig. 10-64 Edit parameter of convert video

3) After the conversion is completed, it will be shown as below.


PlayListPublish
Publish Standard PlayList
Publish Temporary Content
Publish E

PlayList list

Total number: 2

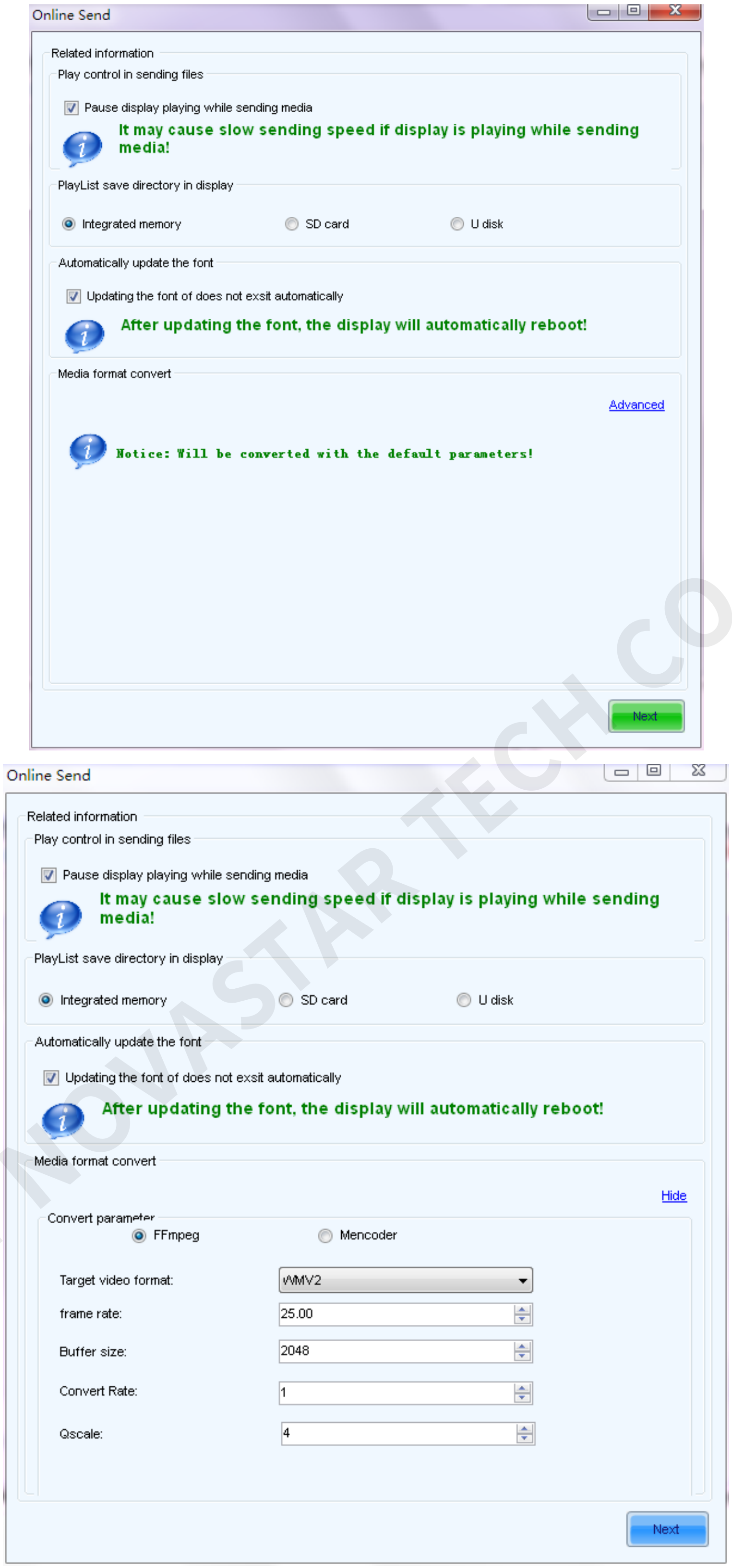
PlayList	Resolution	Convert Status	Send...	Export...	Delete...
20150819051934	128 * 128	Normal(5.98K)	⬆	↗	✖
20150819044652	128 * 128	Normal(6.02K)	⬆	↗	✖

Fig. 10-65 Play-Program conversion result

4) Press ⬆ to publish successfully converted Play-Program, and will enter the window as shown below.

Pause client playing while sending media is suggested, choose where to save Play-Program in client, then press

Click "Advanced", you can set the convert parameters.



Related information

Play control in sending files

☑ Pause display playing while sending media

It may cause slow sending speed if display is playing while sending media!

PlayList save directory in display

● Integrated memory ○ SD card ○ U disk

Automatically update the font

☑ Updating the font of does not exsit automatically

After updating the font, the display will automatically reboot!

Media format convert

Notice: Will be converted with the default parameters!

Related information

Play control in sending files

☑ Pause display playing while sending media

It may cause slow sending speed if display is playing while sending media!

PlayList save directory in display

● Integrated memory ○ SD card ○ U disk

Automatically update the font

☑ Updating the font of does not exsit automatically

After updating the font, the display will automatically reboot!

Media format convert

Convert parameter

● FFmpeg ○ Mencoder

Target video format: WMV2

frame rate: 25.00

Buffer size: 2048

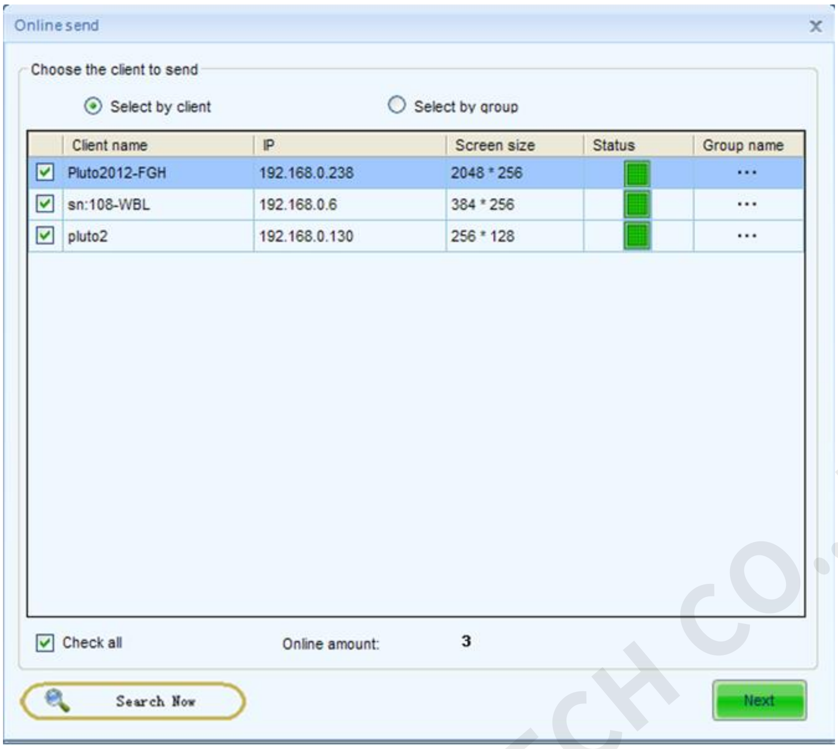
Convert Rate: 1

Qscale: 4

Fig. 10-66 Parameters of online send

5) Click "Next" on Fig.10-67, send playlist to client, if there is only one client, playlist will be sent to this client directly. if there are more than one client , you can select the clients (who’ s

online) which Play-Program will be sent to;



Choose the client to send

● Select by client ○ Select by group

	Client name	IP	Screen size	Status	Group name
☑	Pluto2012-FGH	192.168.0.238	2048 * 256	🟩	···
☑	sn:108-WBL	192.168.0.6	384 * 256	🟩	···
☑	pluto2	192.168.0.130	256 * 128	🟩	···

☑ Check all

Online amount: 3

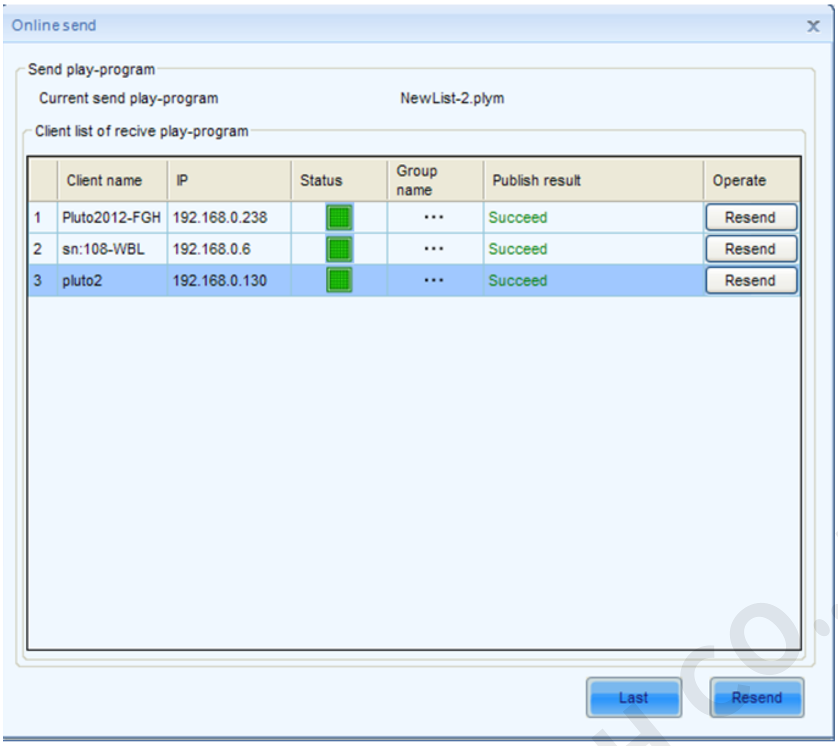
Fig. 10-67 Play-Program online publish page

Select by client: Directly check the client (who’ s online) which Play-Program will be sent to;

Select by group: Publish Play-Program by group;

If the size of terminal screen is different from playback program, and the users still send this playback to the screen, the system will adopt the self adapting window playback, but this will lead to the terminal screen become deformed

6) **Next** to publish, after successfully publishing, below window will be shown.



Send play-program

Current send play-program NewList-2.plym

Client list of recive play-program

	Client name	IP	Status	Group name	Publish result	Operate
1	Pluto2012-FGH	192.168.0.238	🟩	···	Succeed	Resend
2	sn:108-WBL	192.168.0.6	🟩	···	Succeed	Resend
3	pluto2	192.168.0.130	🟩	···	Succeed	Resend

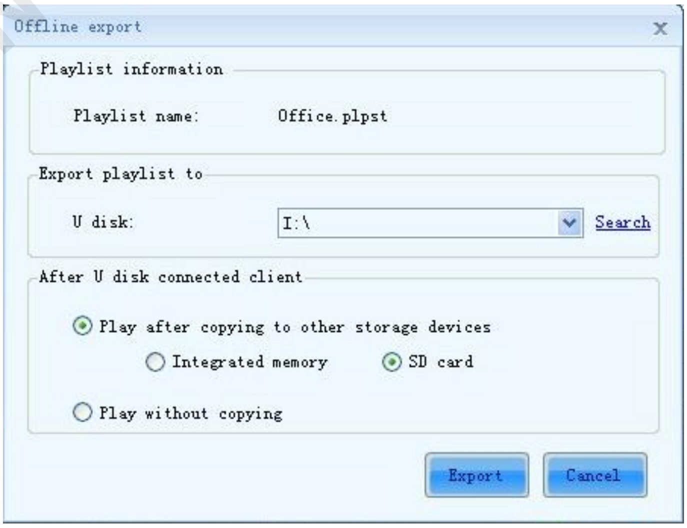
Fig. 10-68 Play-Program publishing successfully

10.4.2 Offline Export

Offline export means to export current Play-Programs to USB disk first, and then connect to client and play.

Operation steps:

1) Press in Fig. 10-65 to enter offline export setttings shown as below,



Playlist information

Playlist name: Office.plpst

Export playlist to

U disk: I:\

After U disk connected client

● Play after copying to other storage devices

○ Integrated memory ● SD card

○ Play without copying

Fig. 10-69 Offline export settings

Play after copying Play-Program to other storage device: under this mode, after connecting USB disk to client, Play-Programs and programs will be copied to selected storage device before playing.

Play without copying: under this mode, after connecting USB disk to client, Play-Programs and programs will be played directly without copying to other storage device.

2) After setting, press **Export** to export current Play-Program to USB disk.

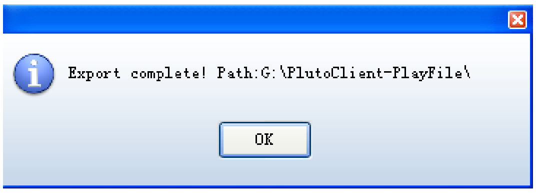
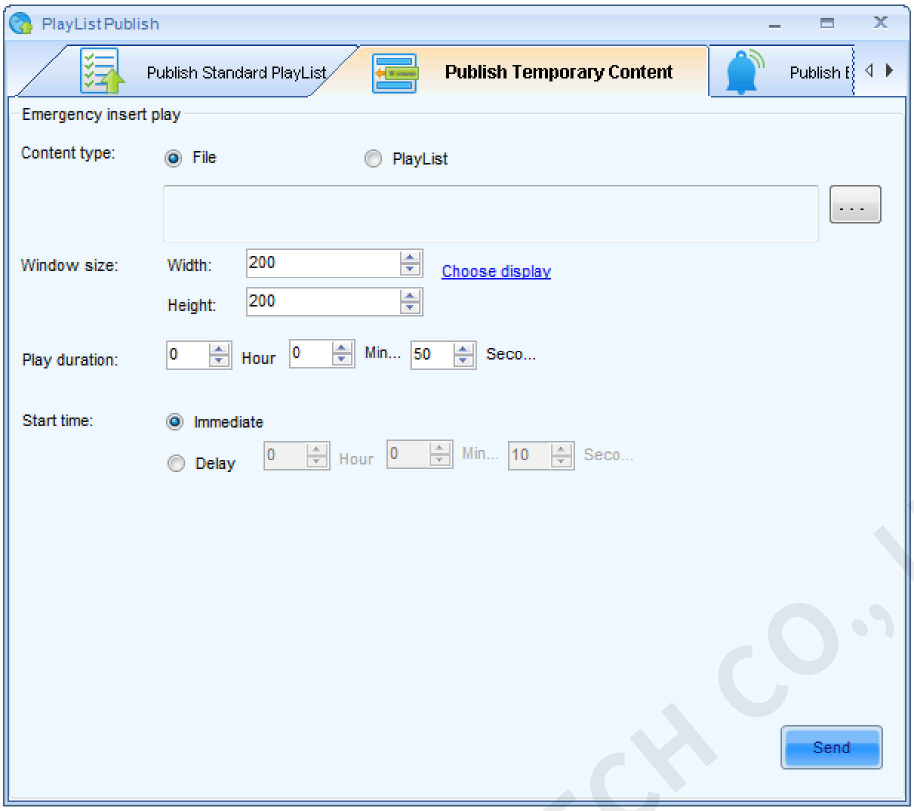

Export complete! Path:G:\PlutoClient-PlayFile\

Fig. 10-70 Export succeed

10.4.3 Publish Temporary Content

Emergency insert play means to insert some media or Play-Programs which need to be played urgently on the client display during normal playing. Instant play and delay play are optional by the degree of urgency. Delay time can be set freely.

Return to Play-Program publish main interface, Click the **Publish Temporary Content** enter the emergency insert play page;



Content type: ● File ○ PlayList

Window size: Width: 200 Height: 200

Play duration: 0 Hour 0 Min... 50 Seco...

Start time: ● Immediate ○ Delay 0 Hour 0 Min... 10 Seco...

Fig. 10-71 Publish Temporary Content page

Content type: File, Playlist

Window size: Size of the current client display;

Play duration: Total play time of inserted media file or Play-Program.

Start time:

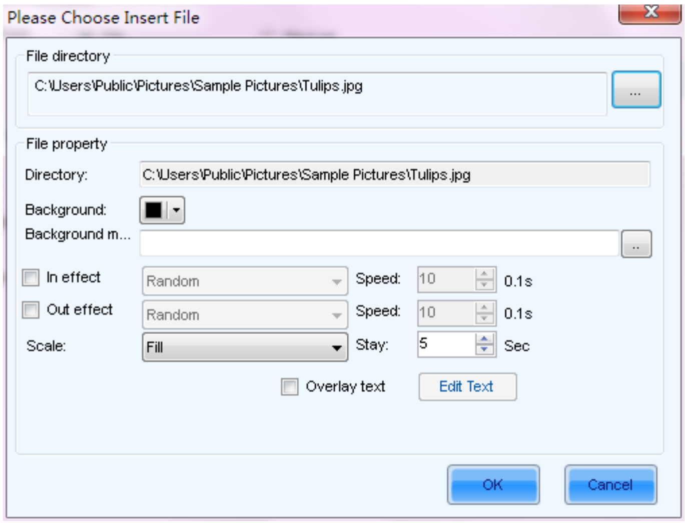
- Immediate: Inserted media file or Play-Program will be played immediately once successfully published;
- Delay: The playing will be delayed for a period of time after successful publishing, the delay time can be set.

	1. Window size must be the real size of the current client display, so when media files are added, and you don't know the size of the display, it can be read directly by choosing client. 2. For insert play, it shall also be considered that whether the window size of Play-Program is same to the size of the display. If they are different, need to edit first.

Operating steps of insert file:

1) Click ... button to select the media files (images, video, audio, documents) need to be inserted, as shown below.

They are editing interfaces of insert pictures, video and audio etc.



Please Choose Insert File

File directory: C:\Users\Public\Pictures\Sample Pictures\Tulips.jpg

File property

Directory: C:\Users\Public\Pictures\Sample Pictures\Tulips.jpg

Background: ■

Background m...:

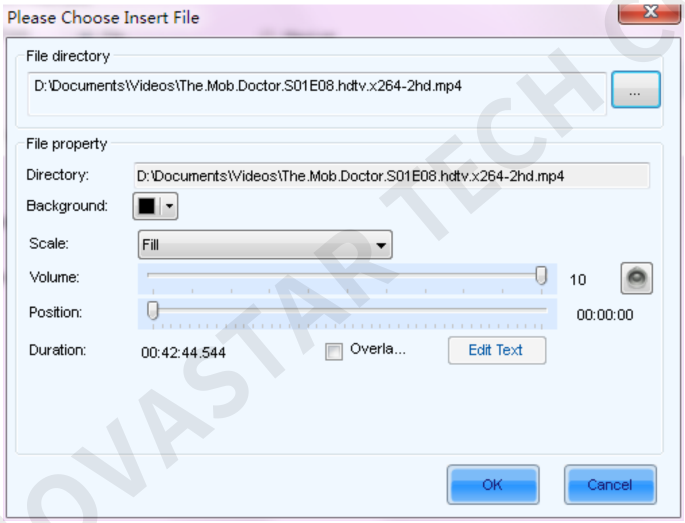
☐ In effect: Random Speed: 10 0.1s

☐ Out effect: Random Speed: 10 0.1s

Scale: Fill Stay: 5 Sec

☐ Overlay text

Fig. 10-72 Insert pictures



Please Choose Insert File

File directory: D:\Documents\Videos\The.Mob.Doctor.S01E08.hdtv.x264-2hd.mp4

File property

Directory: D:\Documents\Videos\The.Mob.Doctor.S01E08.hdtv.x264-2hd.mp4

Background: ■

Scale: Fill

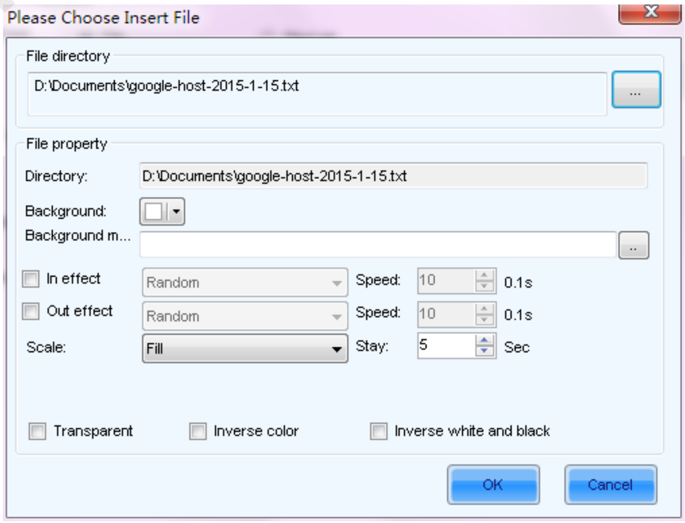
Volume: 10

Position: 00:00:00

Duration: 00:42:44.544

☐ Overla...

Fig. 10-73 Insert video



Please Choose Insert File

File directory: D:\Documents\google-host-2015-1-15.txt

File property

Directory: D:\Documents\google-host-2015-1-15.txt

Background: □

Background m...:

☐ In effect: Random Speed: 10 0.1s

☐ Out effect: Random Speed: 10 0.1s

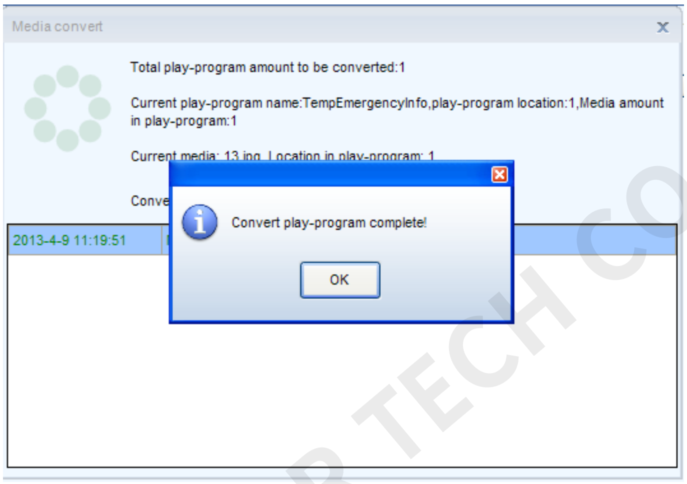
Scale: Fill Stay: 5 Sec

☐ Transparent ☐ Inverse color ☐ Inverse white and black

Fig. 10-74 Insert text file

2) After inserting media files, click **OK** to return to the emergency insert play page as shown in Fig. 10-71. Click **Choose Display** to read the display size of client who need the insert play. Select insert start time and duration;

3) After setting of insert play options, click **Publish** button at the bottom of the page. Edit parameter of convert video window will pop up, as shown in Fig.10-63. Choose the video effect to be converted to, and click **OK**. After conversion is completed, the following window will pop up:



Total play-program amount to be converted:1

Current play-program name:TempEmergencyInfo,play-program location:1,Media amount in play-program:1

Current media: 13.jpg, Location in play-program: 1

Conve

2013-4-9 11:19:51

Convert play-program complete!

Fig. 10-75 Insert play files converted to Play-Program

4) Click **OK** to enter the online publish page as shown below. Select the client who need the insert play (who' s also online). Click **Next**,

5) Check Play-Program and client list to be published. Make sure they are correct, then click **Publish**. When publish result shows Succeed, it means insert play files have been successfully published to the client.

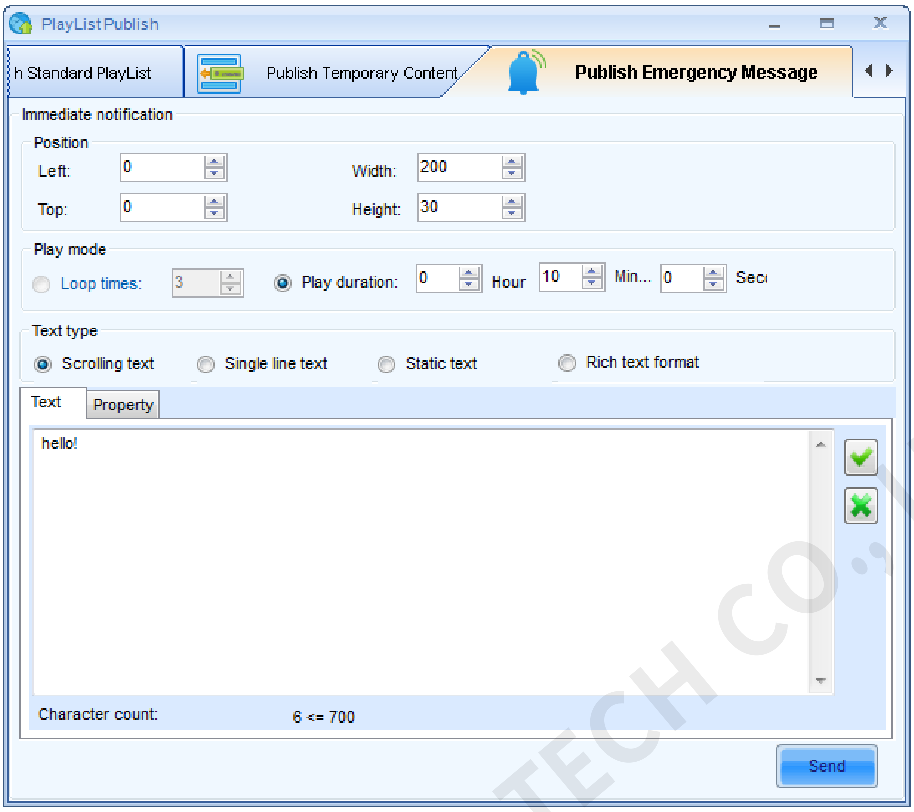
Operating steps of insert PlayList:

Select PlayList in Fig.10-71 Emergency insert play page, and click ... to insert PlayList. The following steps are same to those of insert files.

10.4.4 Immediate Notification

Immediate notification mainly releases some text information. Once successfully published, current information will be played on the client display immediately, prior to all other tasks.

Return to Play-Program publish main interface. Click **Immediate Notification**. The page is as shown below:



Immediate notification

Position

Left: 0

Width: 200

Top: 0

Height: 30

Play mode

○ Loop times: 3

● Play duration: 0 Hour 10 Min... 0 Seco

Text type

● Scrolling text ○ Single line text ○ Static text ○ Rich text format

Text | Property

hello!

Character count: 6 <= 700

Fig. 10-76 Immediate notification page

Position: Position of immediate notification textbox on the display;

- Width: Textbox width ≦ window width;
- Height: Textbox height ≦ window height;
- Left edge: If the upper left corner of the window is (0, 0), the left edge value is the distance between left edge of textbox and left edge of the window, i.e. x coordinate. Left edge ≦ window width - textbox width;
- Top edge: Upper edge value is the distance between the upper edge textbox and the upper edge of the window, i.e. y coordinate. Upper edge ≦ window height - textbox height;

Play mode:

- Loop times: Set loop times of immediate notification
- Play duration: Play duration of immediate notification

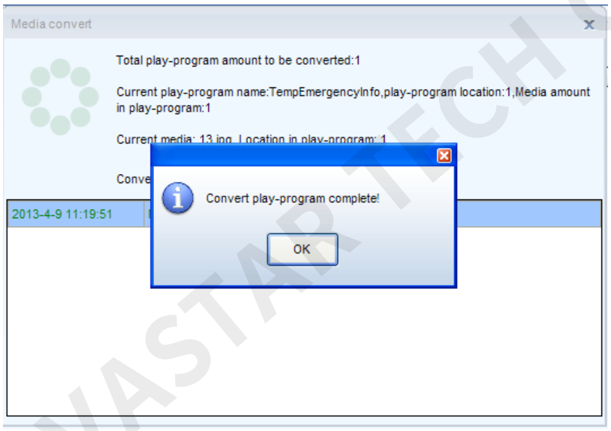
Text type:

- Scrolling text: Editable text, transparent, background, text effects, text color, font, loop, scrolling speed, play duration, etc.

- Single line text: Editable text, transparent, background, text effect, font, entrance/exit effect, retention time, etc.
- Static text: Editable text, transparent, background, paragraph, font, play duration, etc.
- Complex text: Text editor, transparent, background, entrance/exit effect, retention time, etc.

Operating steps of immediate notification

1) Edit textbox size, coordinates, content, and text format in immediate notification page;
2) Click **Publish** after editing. Choose Video Conversion Quality window will pop up. Select the quality you want to convert;
3) After conversion is completed, the page will be as shown below:



Total play-program amount to be converted:1

Current play-program name:TempEmergencyInfo,play-program location:1,Media amount in play-program:1

Current media: 13.jpg, Location in play-program: 1

Conve

2013-4-9 11:19:51

Convert play-program complete!

Fig. 10-77 Instant notification convert to Play-Program

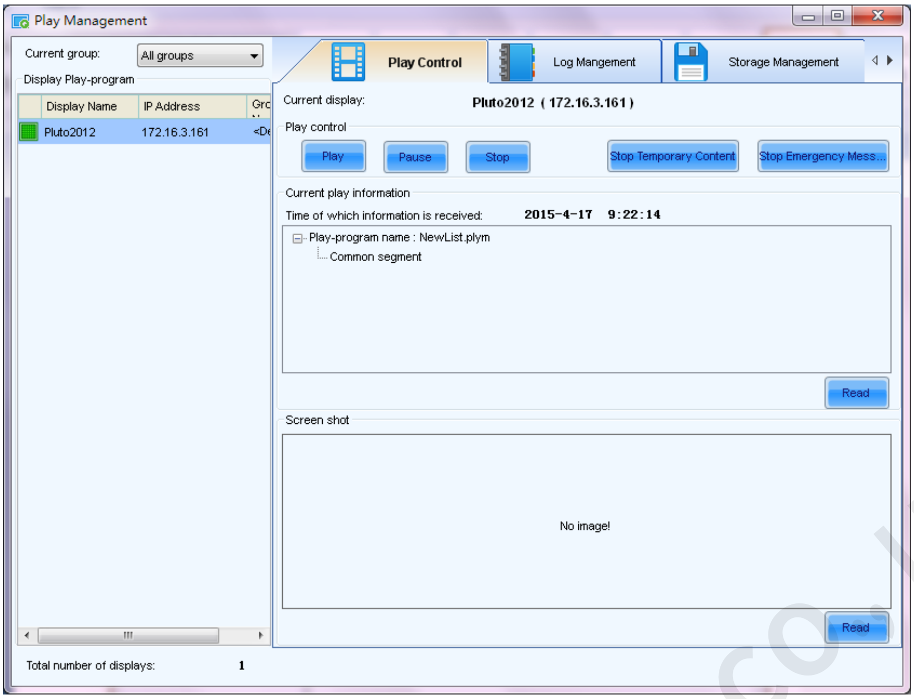
4) Click **OK** to enter the online publish page. The following steps are same to online publish.

10.5 Play management

Play management includes play control, log management and storage management, to help users know the current play status and external storage condition of client timely,.

10.5.1 Play Control

Enter the play control page directly by clicking **Play Management** in the main interface, as shown below. On the left is client list. Select a client to control play status of it.


Play Management
Play Control
Log Mangement
Storage Management
Display Play-program
Play control
Play
Pause
Stop
Stop Temporary Content
Stop Emergency Mess...
Current play information
Read
Screen shot
Read

Current group: All groups

Display Name	IP Address	Grc
🟩 Pluto2012	172.16.3.161	<De

Current display: Pluto2012 (172.16.3.161)

Time of which information is received: 2015-4-17 9:22:14

```
⊟ Play-program name : NewList.plym
  └ Common segment
```

No image!

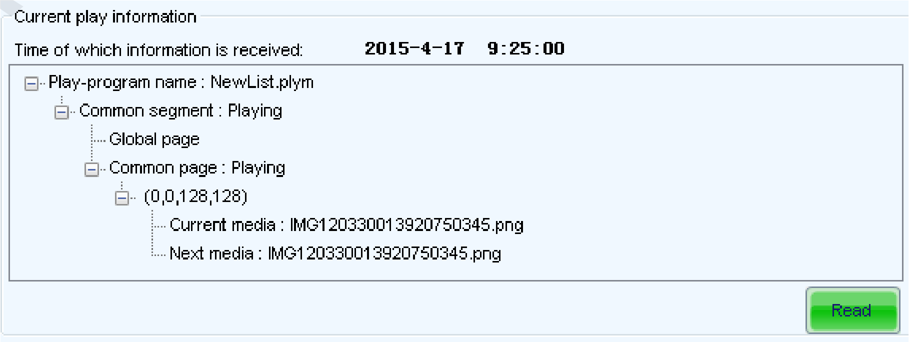
Total number of displays: 1

Fig. 10-78 Play control page

Play Control:

- Play: Enable the client display start to play
- Pause: Pause the current playing
- Stop: Stop the current playing
- Stop Temporary Content: Cancel the inert play task
- Stop Emergency Message: Cancel the immediate notification

Current play information: User can refresh to get the current playing status of current client; Just select a terminal and click Read button, the current play information of the selected terminal will be shown.


Current play information
Read

Time of which information is received: 2015-4-17 9:25:00

```
⊟ Play-program name : NewList.plym
   ⊟ Common segment : Playing
      ├ Global page
      ⊟ Common page : Playing
         ⊟ (0,0,128,128)
            ├ Current media : IMG120330013920750345.png
            └ Next media : IMG120330013920750345.png
```

Fig. 10-79 current play information

Screen Shot: Click to get the real-time play image of the current client;

Just select a terminal and click Read button, the current play image of the selected terminal will be shown，click for a larger view.

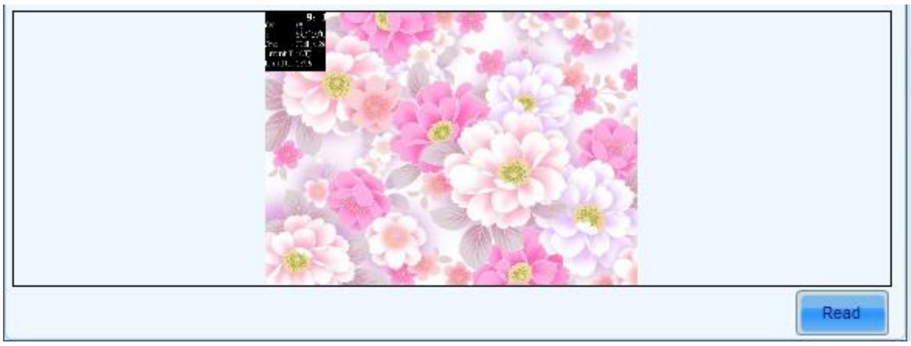
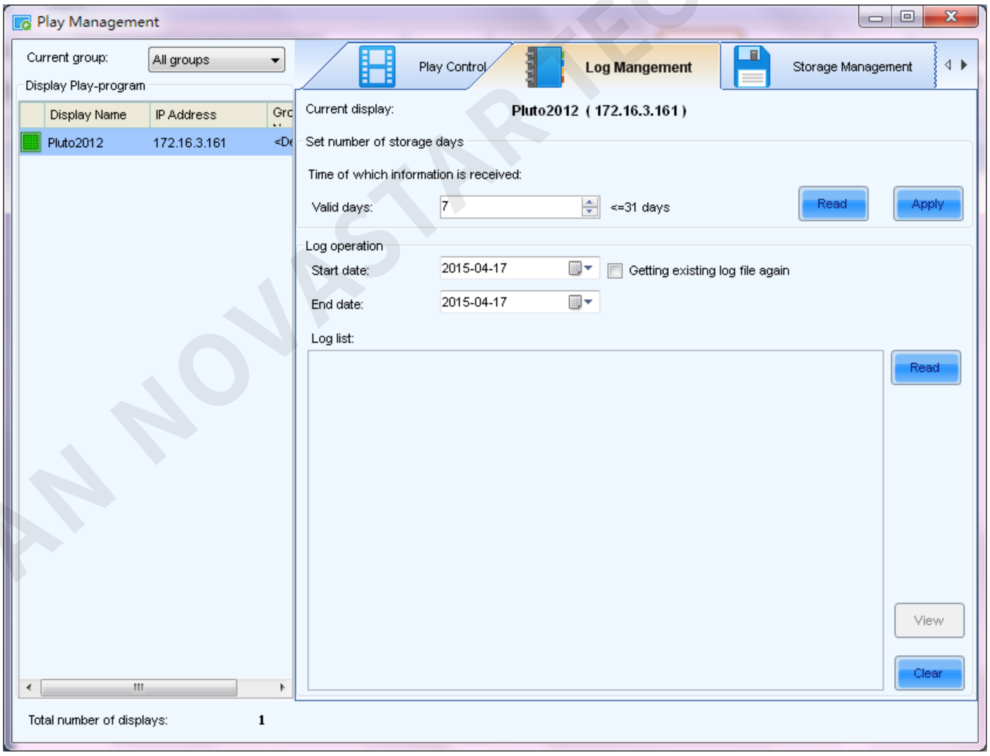


Fig. 10-80 Screen Shot

10.5.2 Log Management

User can set valid days of log storage and view log of specific period of time in log management page.


Play Management
Display Play-program
Play Control
Log Mangement
Storage Management
Set number of storage days
Time of which information is received:
Read
Apply
Log operation
☐ Getting existing log file again
Log list:
Read
View
Clear

Current group: All groups

Display Name	IP Address	Grc
Pluto2012	172.16.3.161	<De

Total number of displays: 1

Current display: Pluto2012（172.16.3.161）

Valid days: 7 <=31 days

Start date: 2015-04-17

End date: 2015-04-17

Fig. 10-81 Log management page

Set number of storage days: The user can set freely, but it shall not be more than 31 days. After the setting, click **Apply** to take effect. Click **Read** to view the current setting;

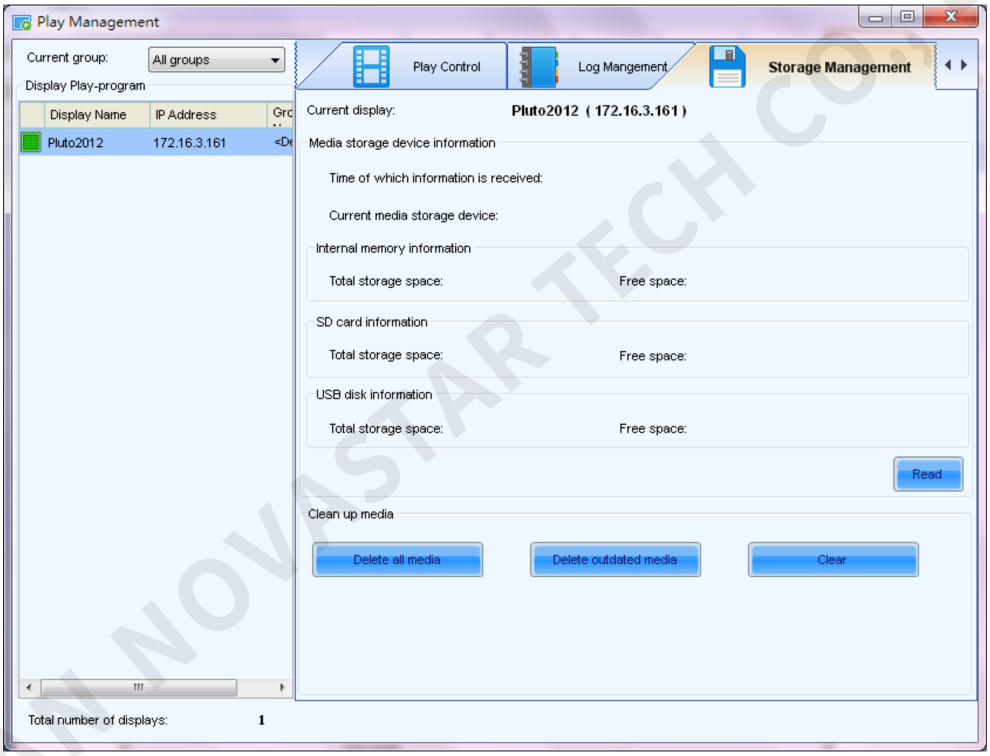
Log operation: User can set the start and end date, check **Getting existing log again**, and then

Read to obtain log list of corresponding period of time.

10.5.3 Storage Management

Media Play-Programs are all stored in the hardware or removable storage devices of client. In order to avoid failure of sending or loss of media due to lack of space, user shall maintain storage device space regularly.

Space utilization of media storage devices of each client can be viewed in storage management page. All media, expired media and all lists can be deleted. Please manage the remaining space of storage devices timely.



Current group: All groups

Display Play-program

Display Name	IP Address	Grc
Pluto2012	172.16.3.161	<De

Current display: Pluto2012 (172.16.3.161)

Total number of displays: 1

Play Management
Play Control
Log Mangement
Storage Management
Media storage device information
Time of which information is received:
Current media storage device:
Internal memory information
Total storage space:
Free space:
SD card information
Total storage space:
Free space:
USB disk information
Total storage space:
Free space:
Read
Clean up media
Delete all media
Delete outdated media
Clear

Fig. 10-82 Storage management page

Read: read total storage space and available space of client storage devices;

Delete all media: Delete all the media files of the current media storage device;

Delete Outdated media:

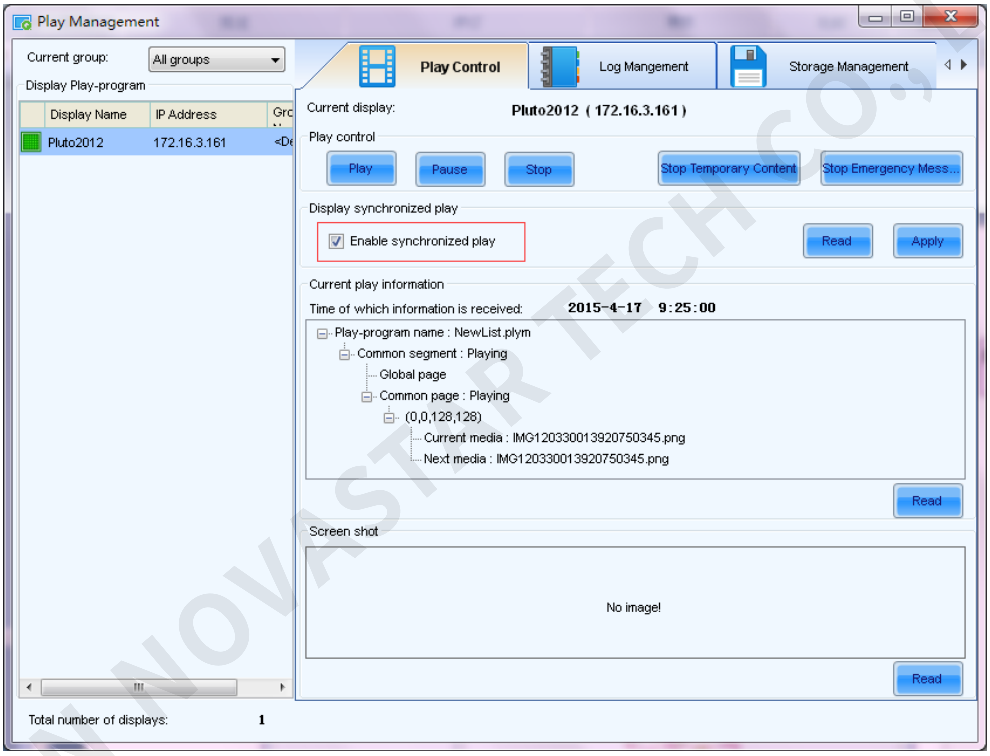
media files not used by the current play program are considered as expired media. Click on this button will delete all expired media files.

10.5.4 Synchronous Broadcast

It will broadcast in strict accordance with the time quantum of broadcast scheme if the synchronous broadcast terminal is initiated. The time synchronization generally shall be carried out on terminals in order to guarantee high time consistency. See Terminal Time Synchronization in 10.8 for the specific operations for the time synchronization.

Select the terminal in terminal list, and input” admin” or” 888” then you can see the interface as below.

Click "Enable synchronized play " → "Apply" to activate the function.


Play Management
Play Control
Log Mangement
Storage Management
Display Play-program
Play control
Play
Pause
Stop
Stop Temporary Content
Stop Emergency Mess...
Display synchronized play
Read
Apply
Current play information
Read
Screen shot
Read

Current group: All groups

Display Name	IP Address	Grc
Pluto2012	172.16.3.161	<De

Total number of displays: 1

Current display: Pluto2012 (172.16.3.161)

☑ Enable synchronized play

Time of which information is received: 2015-4-17 9:25:00

- Play-program name : NewList.plym
  - Common segment : Playing
    - Global page
    - Common page : Playing
      - (0,0,128,128)
        - Current media : IMG120330013920750345.png
        - Next media : IMG120330013920750345.png

No image!

Fig. 10-83 Synchronous broadcast

10.6 Display Control

The display control includes System Configuration, Network Configuration, Server Configuration , Brightness Adjustment and Power Schedule.

In addition: The order of the sub-options can be adjusted; for example, click "Network Configuration" and press left click to drag around.

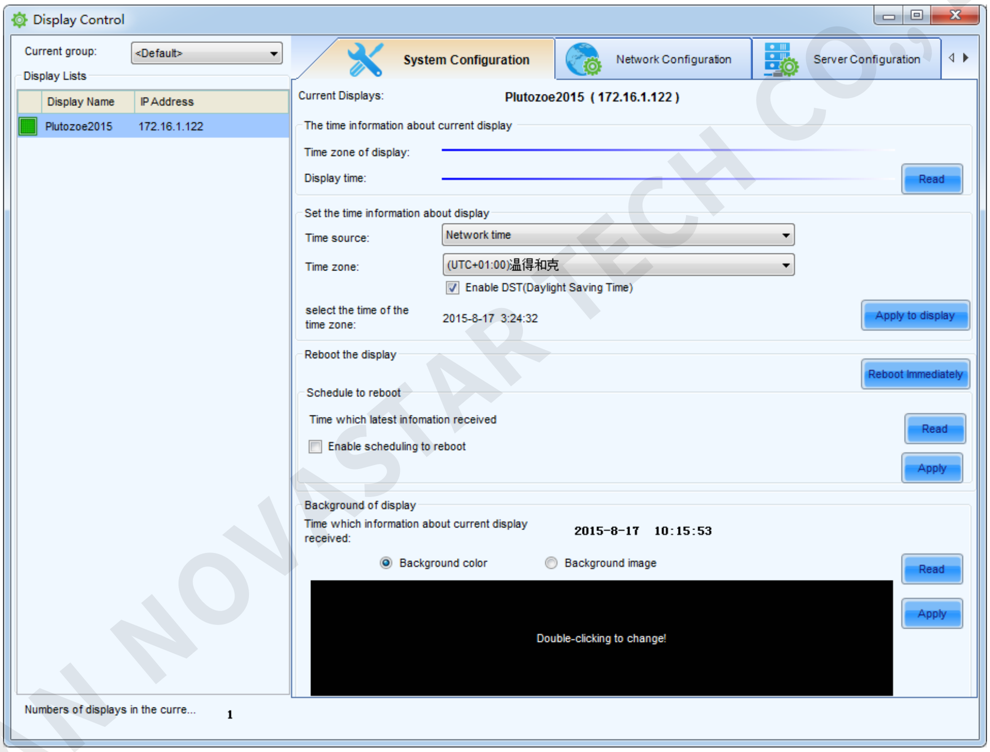
10.6.1 System Configuration

10.6.1.1 Time Management

The time error may occur on terminal after a long time work, or the time shall be adjusted after the asynchronous card is replaced.

Under system control interface, users can read the current client time and time zone, check out the time of selected zone, apply the time zone to the terminal

For example: select a time zone" Central America" , To show the time of this time zone. click 【Read】button, to read client time and client time zone , and the window is as follow:


Display Control
System Configuration
Network Configuration
Server Configuration
Read
Apply to display
Reboot Immediately
Read
Apply
Read
Apply
Double-clicking to change!

Current group: <Default>

Display Lists

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Numbers of displays in the curre... 1

Current Displays: Plutozoe2015 (172.16.1.122)

The time information about current display

Time zone of display:

Display time:

Set the time information about display

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:24:32

Reboot the display

Schedule to reboot

Time which latest infomation received

☐ Enable scheduling to reboot

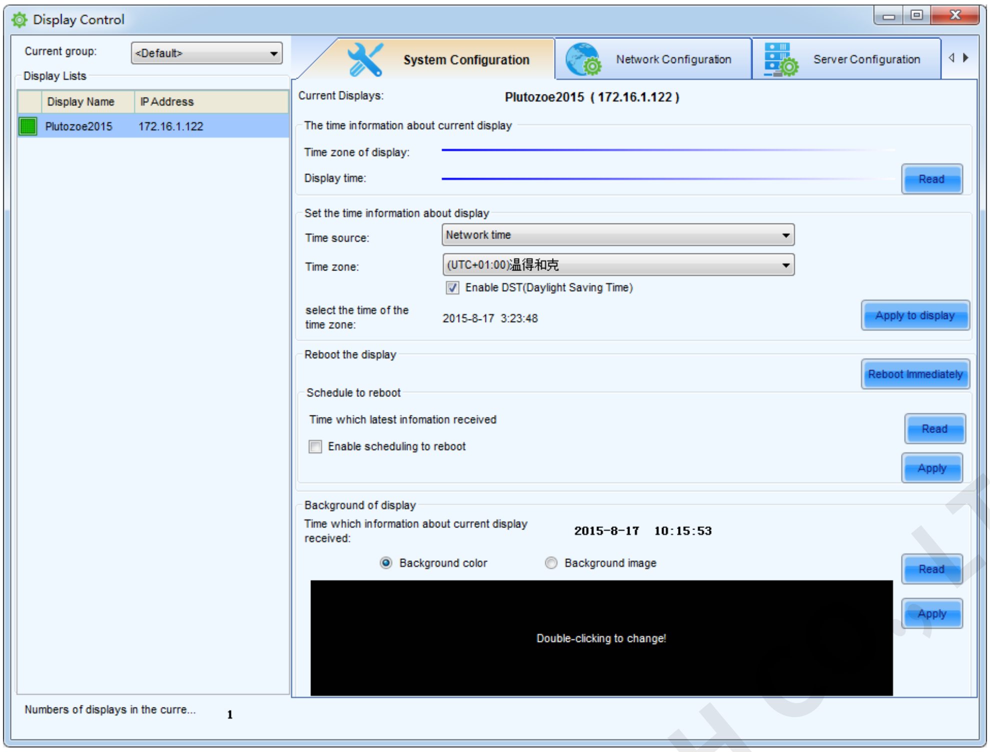
Background of display

Time which information about current display received: 2015-8-17 10:15:53

● Background color ○ Background image

Fig. 10-84 Time management page

Click 【Apply to display】, The message of "Set client system succeed" indicates client time correctly set. Click 【Read】 button and you will see the terminal time is the same as that of the time zone.



Display Control

Current group: <Default>

Display Lists

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

The time information about current display

Time zone of display:

Display time:

Set the time information about display

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:23:48

Reboot the display

Schedule to reboot

Time which latest infomation received

☐ Enable scheduling to reboot

Background of display

Time which information about current display received: 2015-8-17 10:15:53

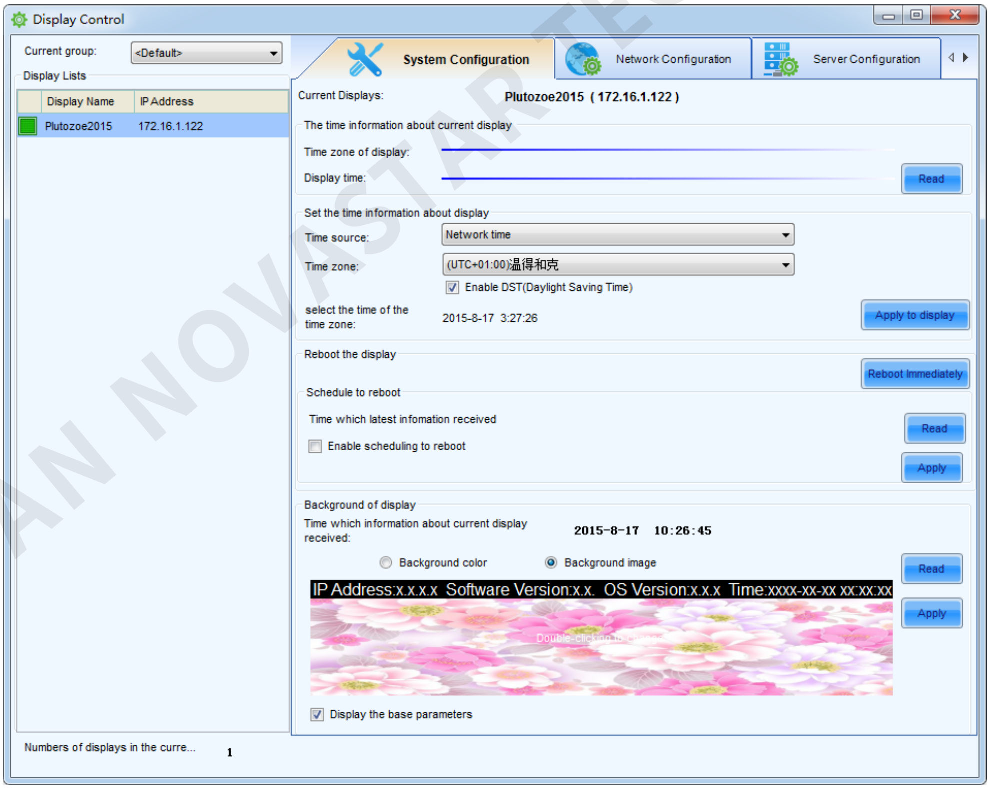
● Background color ○ Background image

Double-clicking to change!

Numbers of displays in the curre... 1

System Configuration
Network Configuration
Server Configuration
Read
Apply to display
Reboot Immediately
Read
Apply
Read
Apply

Fig. 10-85 Adjust time



Display Control

Current group: <Default>

Display Lists

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

The time information about current display

Time zone of display:

Display time:

Set the time information about display

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:27:26

Reboot the display

Schedule to reboot

Time which latest infomation received

☐ Enable scheduling to reboot

Background of display

Time which information about current display received: 2015-8-17 10:26:45

○ Background color ● Background image

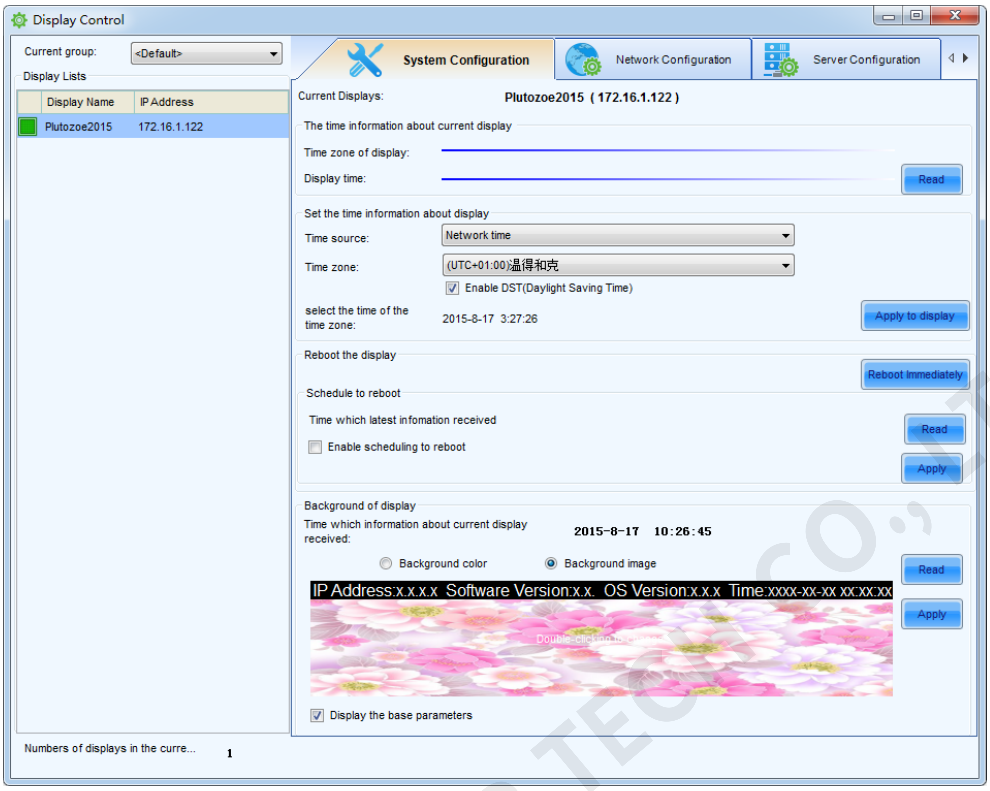
IP Address:x.x.x.x Software Version:x.x. OS Version:x.x.x Time:xxxx-xx-xx xx:xx:xx

☑ Display the base parameters

Numbers of displays in the curre... 1

System Configuration
Network Configuration
Server Configuration
Read
Apply to display
Reboot Immediately
Read
Apply
Read
Apply
Double-clicking to change!

10.6.1.2 Reboot the Display


Display Control
System Configuration
Network Configuration
Server Configuration
Display Lists
The time information about current display
Set the time information about display
Reboot the display
Schedule to reboot
Background of display
Read
Apply to display
Reboot Immediately
Read
Apply
Read
Apply
Double-clicking to change

Current group: <Default>

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Numbers of displays in the curre... 1

Current Displays: Plutozoe2015 (172.16.1.122)

Time zone of display:

Display time:

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:27:26

Time which latest infomation received

☐ Enable scheduling to reboot

Time which information about current display received: 2015-8-17 10:26:45

○ Background color ● Background image

IP Address:x.x.x.x Software Version:x.x. OS Version:x.x.x Time:xxxx-xx-xx xx:xx:xx

☑ Display the base parameters

Fig. 10-86 Display reboot

Reboot Immediately: select the display, and click “**Reboot Immediately**” button to reboot the current display.

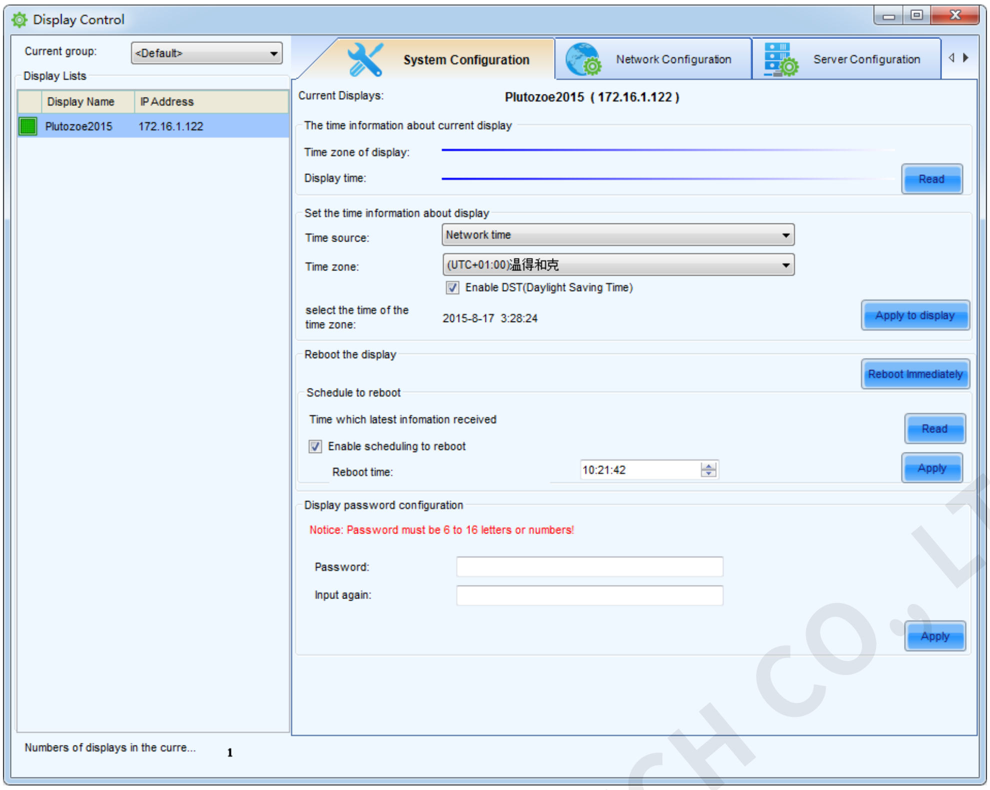
Schedule to reboot:

Click “**Read**” to view whether the current terminal is set as clocked restart.

If yes, the reboot time can be altered; if no, please tick “**Enable scheduling to reboot**” to set the reboot time; finally click “Apply” to send the reboot command to the asynchronous card.

10.6.1.3 Display Password Configuration

Input "admin" at the interface of "System Configuration" to display the terminal password setting interface, as shown in the following figure. As no password has been set for the terminal, input a password is displayed in the interface; if the password has been set previously, the password can be cancelled or changed.


Display Control
System Configuration
Network Configuration
Server Configuration
Display Lists
The time information about current display
Read
Set the time information about display
Apply to display
Reboot the display
Reboot Immediately
Schedule to reboot
Time which latest infomation received
Read
Apply
Display password configuration
Apply

Current group: <Default>

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

Time zone of display:

Display time:

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:28:24

☑ Enable scheduling to reboot

Reboot time: 10:21:42

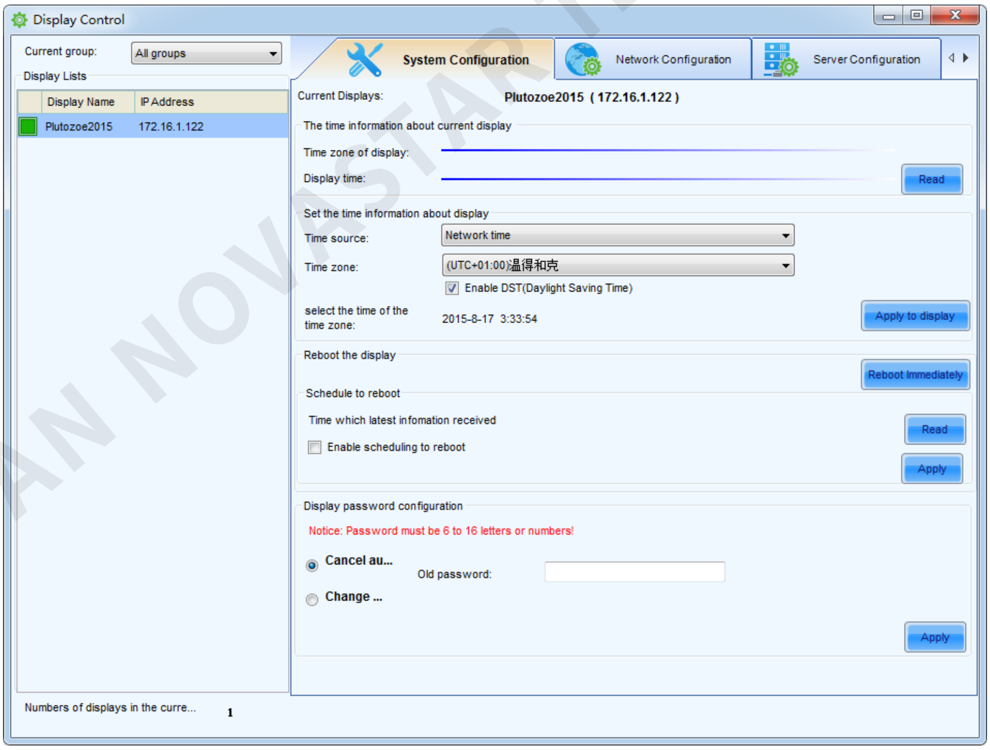
Notice: Password must be 6 to 16 letters or numbers!

Password:

Input again:

Numbers of displays in the curre... 1

Fig. 10-87 Display password


Display Control
System Configuration
Network Configuration
Server Configuration
Display Lists
The time information about current display
Read
Set the time information about display
Apply to display
Reboot the display
Reboot Immediately
Schedule to reboot
Time which latest infomation received
Read
Apply
Display password configuration
Apply

Current group: All groups

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

Time zone of display:

Display time:

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:33:54

☐ Enable scheduling to reboot

Notice: Password must be 6 to 16 letters or numbers!

● Cancel au...

○ Change ...

Old password:

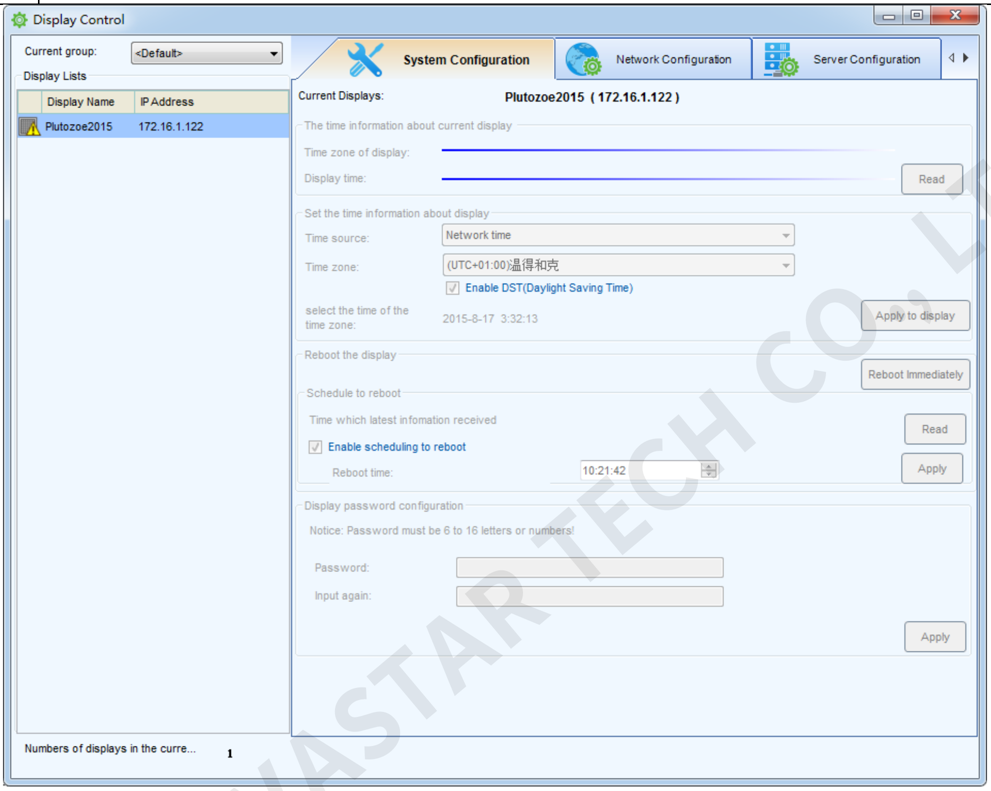
Numbers of displays in the curre... 1

Fig. 10-88 Cancel or modify password

Note:

After the display is configured with a password, an exclamation mark as shown.

	will be displayed on the terminal; that is because no authorization has been given on PlutoManager; in the main interface of PlutoManager, click "Configuration" - select "Authorization Configuration" - check the "Input the Authorize Password" - input the latest password - click "OK". See [11 Client Authorization](#) for the detailed descriptions for the authorization.


Display Control
Display Lists
System Configuration
Network Configuration
Server Configuration
The time information about current display
Time zone of display:
Display time:
Read
Set the time information about display
Apply to display
Reboot the display
Reboot Immediately
Schedule to reboot
Time which latest infomation received
Read
Apply
Display password configuration
Password:
Input again:
Apply

Current group: <Default>

Display Name	IP Address
Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

Time source: Network time

Time zone: (UTC+01:00)温得和克

☑ Enable DST(Daylight Saving Time)

select the time of the time zone: 2015-8-17 3:32:13

☑ Enable scheduling to reboot

Reboot time: 10:21:42

Notice: Password must be 6 to 16 letters or numbers!

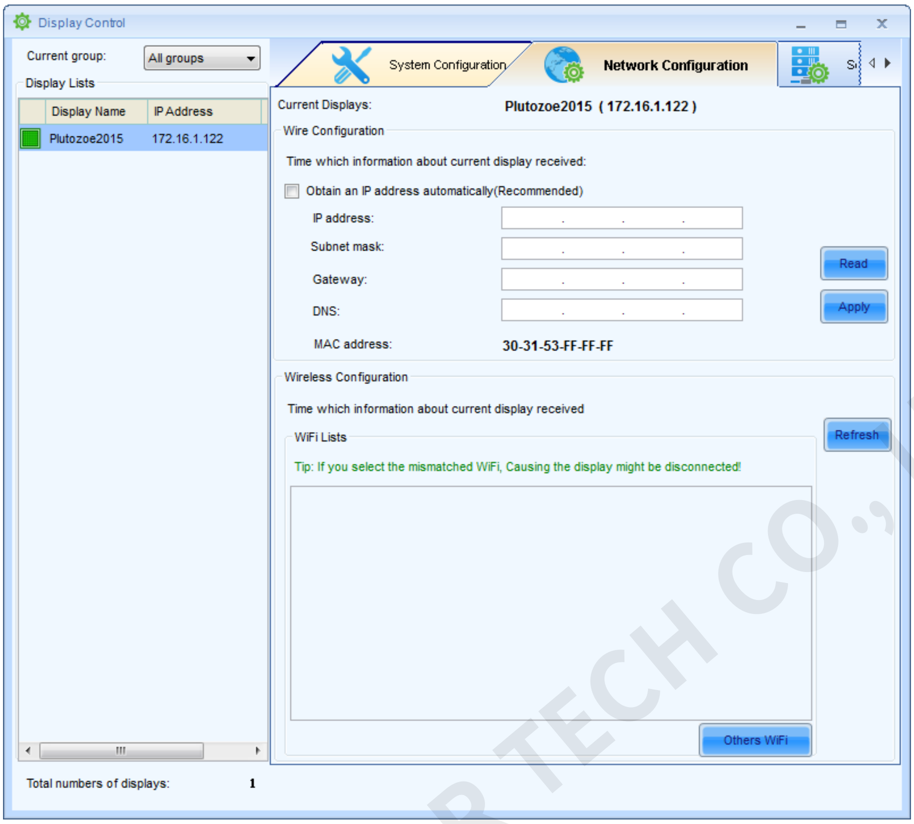
Numbers of displays in the curre... 1

Fig. 10-89 Terminal unauthorized

10.6.2 Network Configuration

Modify the current terminal network parameters; set terminal IP under "Wired Configuration" if the terminal is connected with the control system network by cable; carry it out under "Wireless Configuration" if the terminal is connected with the network through wifi.

10.6.2.1 Wired Configuration



Current group: All groups

Display Lists

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Total numbers of displays: 1

Current Displays: Plutozoe2015 (172.16.1.122)

Wire Configuration

Time which information about current display received:

☐ Obtain an IP address automatically(Recommended)

IP address: . . .

Subnet mask: . . .

Gateway: . . .

DNS: . . .

MAC address: 30-31-53-FF-FF-FF

Wireless Configuration

Time which information about current display received

WiFi Lists

Tip: If you select the mismatched WiFi, Causing the display might be disconnected!

Fig. 10-90 Wired configuration

Click “**Read**” to read the current IP.

Remote Change of Terminal IP:

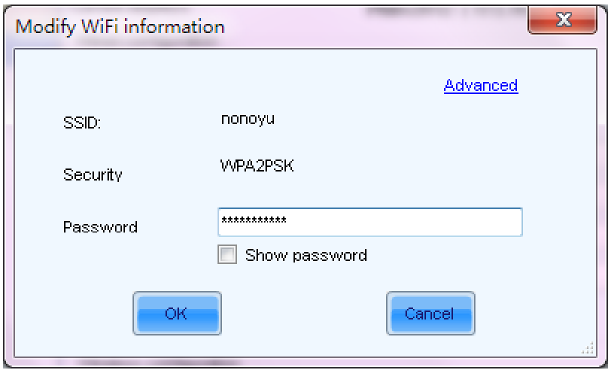
Method 1: Tick “**Obtain an IP address automatically (Recommended)**” and the click “**Apply”** .

Method 2: Change the parameter manually, and then click “**Apply**” .

When IP is successfully set, the terminal will automatically disconnect, and then reconnect.

10.6.2.2 Wireless Configuration

Click "Refresh" button to refresh the searched Wifi by the current terminal; double-click on a wifi, then the current terminal can be connected to the wifi (if the wifi has a password, it is necessary to input the password).

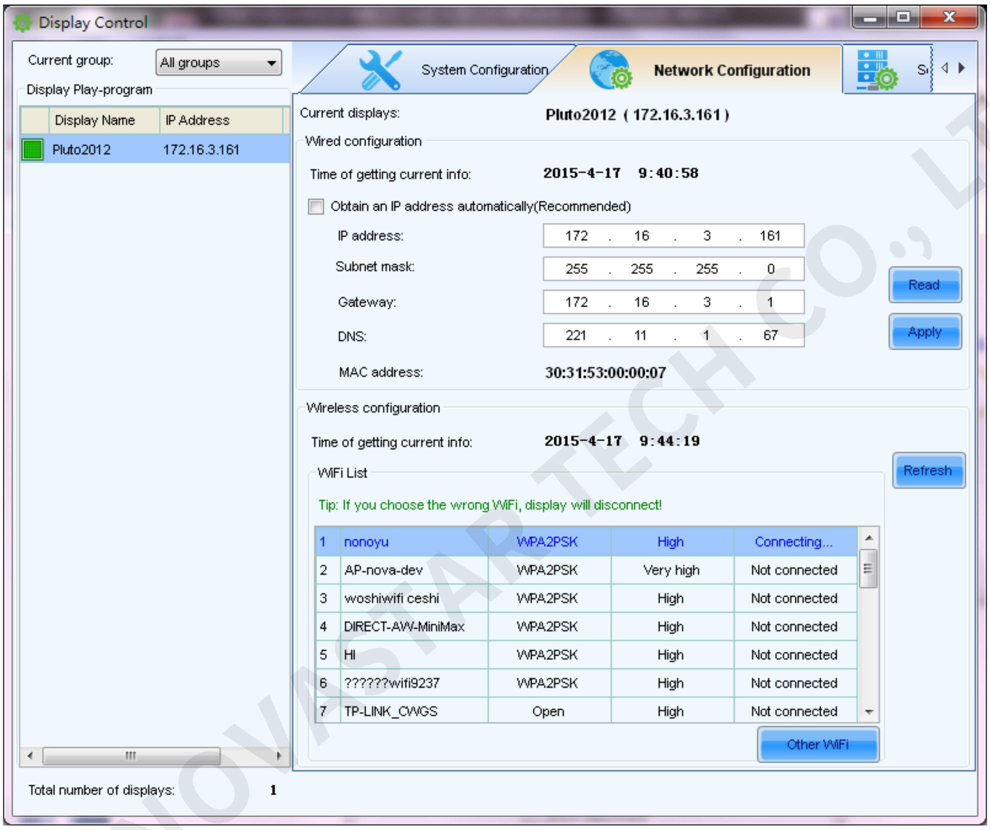

Modify WiFi information
Advanced
OK
Cancel

SSID: nonoyu

Security WPA2PSK

Password ***********

☐ Show password


Display Control
System Configuration
Network Configuration
Read
Apply
Refresh
Other WiFi

Current group: All groups

Display Play-program

Display Name	IP Address
🟩 Pluto2012	172.16.3.161

Total number of displays: 1

Current displays: Pluto2012 (172.16.3.161)

Wired configuration

Time of getting current info: 2015-4-17 9:40:58

☐ Obtain an IP address automatically(Recommended)

IP address: 172 . 16 . 3 . 161

Subnet mask: 255 . 255 . 255 . 0

Gateway: 172 . 16 . 3 . 1

DNS: 221 . 11 . 1 . 67

MAC address: 30:31:53:00:00:07

Wireless configuration

Time of getting current info: 2015-4-17 9:44:19

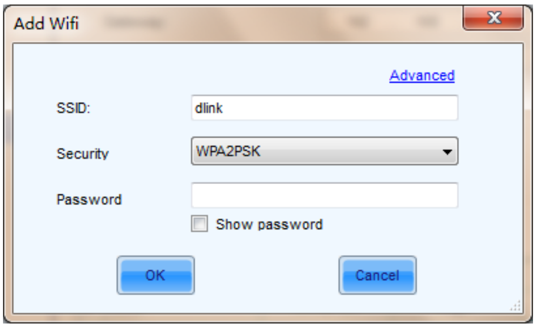
WiFi List

Tip: If you choose the wrong WiFi, display will disconnect!

1	nonoyu	WPA2PSK	High	Connecting...
2	AP-nova-dev	WPA2PSK	Very high	Not connected
3	woshiwifi ceshi	WPA2PSK	High	Not connected
4	DIRECT-AW-MiniMax	WPA2PSK	High	Not connected
5	HI	WPA2PSK	High	Not connected
6	??????wifi9237	WPA2PSK	High	Not connected
7	TP-LINK_CWGS	Open	High	Not connected

Fig. 10-91 Wireless configuration

Click "Other wifis" to add the wifi that is too far away to be searched by the terminal (if the wifi has a password, it is necessary to input the password).


Add Wifi
Advanced
OK
Cancel

SSID: dlink

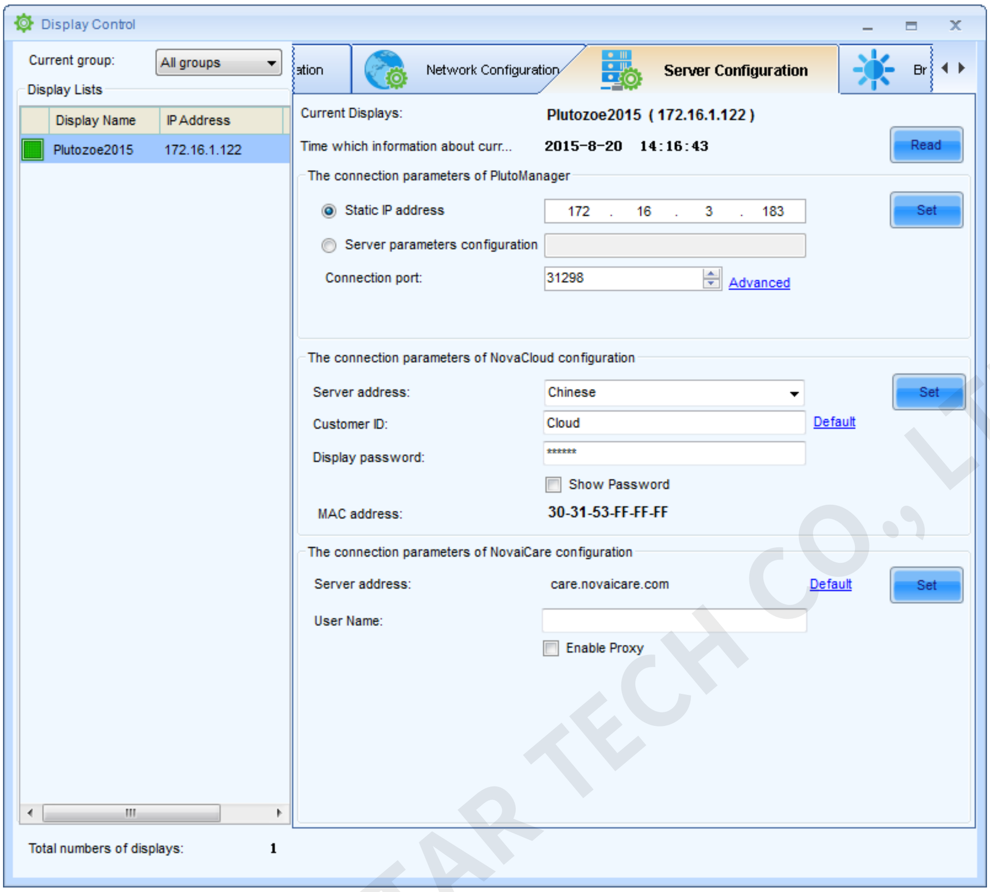
Security WPA2PSK

Password

☐ Show password

Fig. 10-92 Add other wifis

10.6.3 Server Configuration



Current group: All groups

Display Lists

Display Name	IP Address
🟩 Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

Time which information about curr... 2015-8-20 14:16:43

The connection parameters of PlutoManager

● Static IP address 172 . 16 . 3 . 183

○ Server parameters configuration

Connection port: 31298 Advanced

The connection parameters of NovaCloud configuration

Server address: Chinese

Customer ID: Cloud Default

Display password: ******

☐ Show Password

MAC address: 30-31-53-FF-FF-FF

The connection parameters of NovaiCare configuration

Server address: care.novaicare.com Default

User Name:

☐ Enable Proxy

Total numbers of displays: 1

Fig. 10-93 Server Configuration

Read: read the current server configuration of the display.

The connection parameters of PlutoManager

Static IP address: the local IP of the control computer.

Server parameters configuration: The domain name of the Server which PlutoManager connected with.

Connection port: adopt the default settings to ensure that the port can't be taken up by other software (in the main interface of PlutoManager, click "Configuration" - "Software Configuration" and then set the connection port).

Set: After the server parameter is set, click "Set" to apply that to the terminal.

The connection parameters of NovaCloud configuration

Server address: Select the server address from the three choices.

Customer ID: Defaults to Cloud. It cannot be modified.

Display password: Display authorize password set by users.

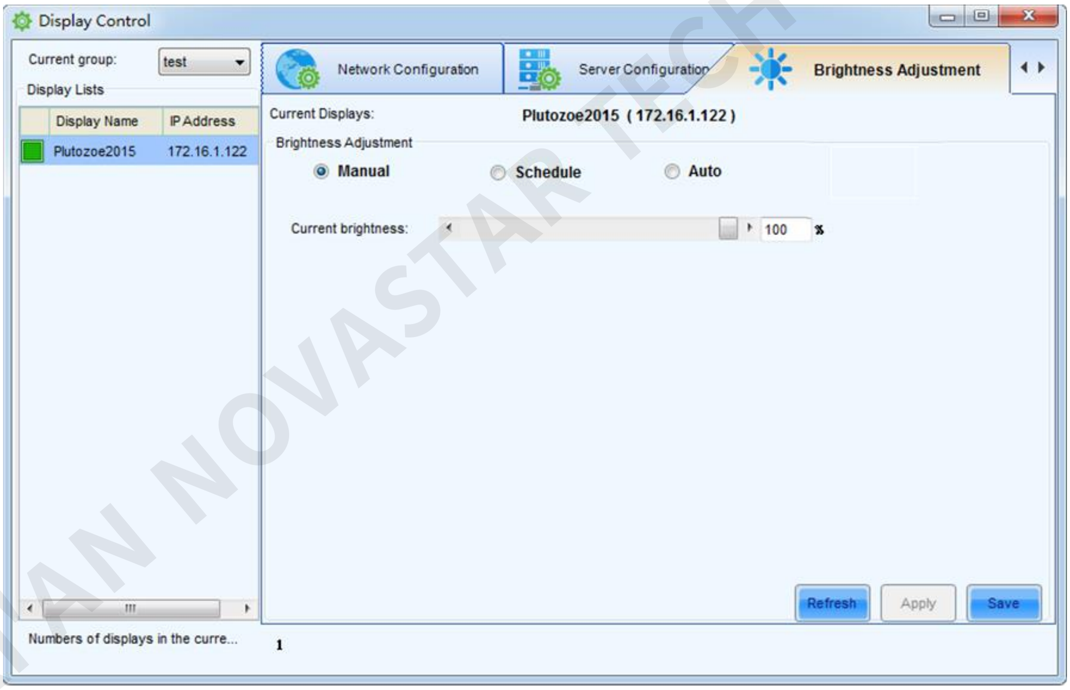
MAC address: It is one of the requirements when the display sign up to NovaCloud.

10.6.4 Brightness Adjustment

10.6.4.1 Manual Brightness

Pull the bar can adjust the display brightness, which will be automatically applied to the terminal display screen.

Click "Save" to save the brightness setting to the hardware, where the brightness will not be lost when the power is cut off.


Display Control
Display Lists
Network Configuration
Server Configuration
Brightness Adjustment
Brightness Adjustment
Refresh
Apply
Save

Current group: test

	Display Name	IP Address
🟩	Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

● Manual ○ Schedule ○ Auto

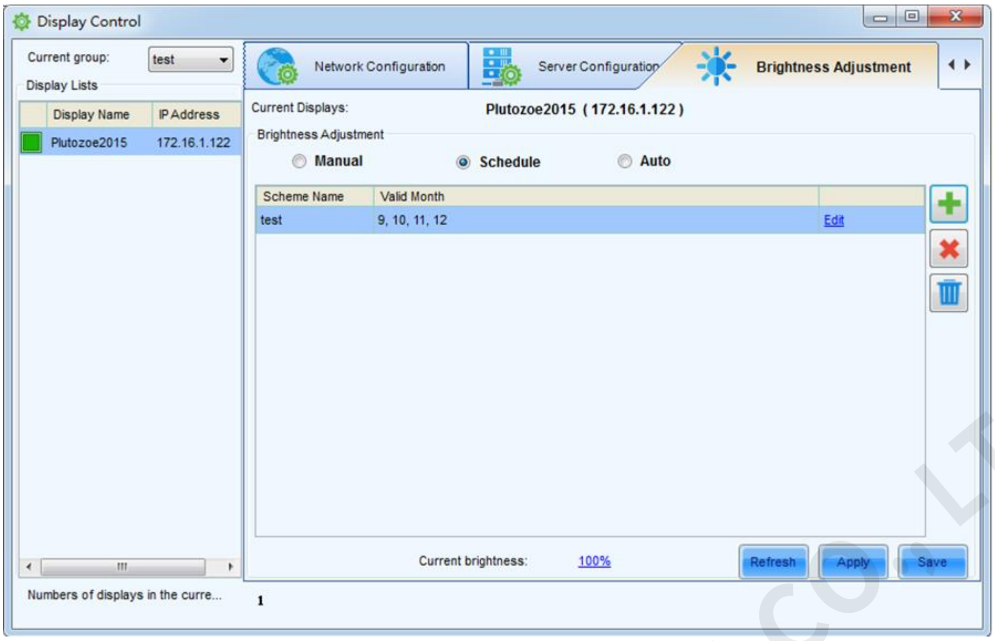
Current brightness: 100 %

Numbers of displays in the curre... 1

Fig. 10-94 Manual Adjustment

10.6.4.2 Schedule Brightness

The Schedule brightness adjustment shall not be set on NovaPluto-LCT and PlutoManager simultaneously; if both software have been set with the schedule adjustment, then the system will perform the final setting.


Display Control
Network Configuration
Server Configuration
Brightness Adjustment
Edit
Refresh
Apply
Save

Current group: test

Display Lists

	Display Name	IP Address
🟩	Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

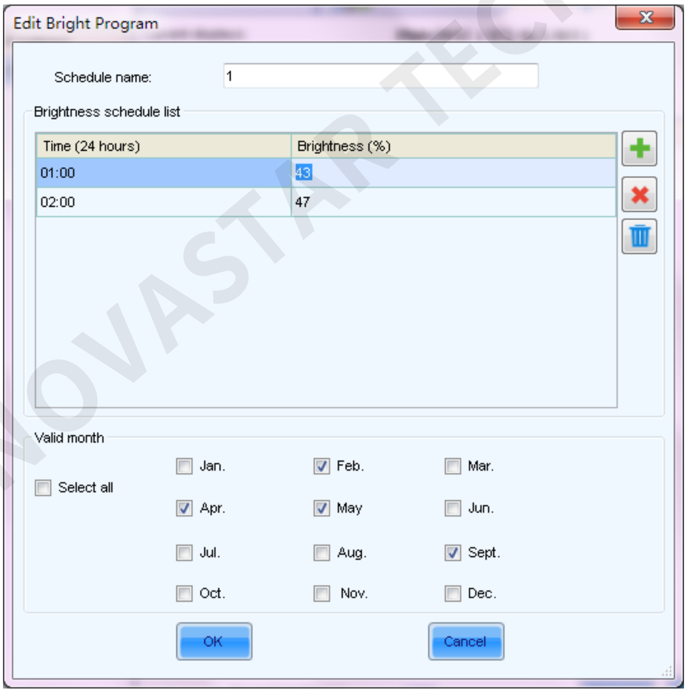
Brightness Adjustment

○ Manual ● Schedule ○ Auto

Scheme Name	Valid Month
test	9, 10, 11, 12

Current brightness: 100%

Numbers of displays in the curre... 1


Edit Bright Program
OK
Cancel

Schedule name: 1

Brightness schedule list

Time (24 hours)	Brightness (%)
01:00	43
02:00	47

Valid month

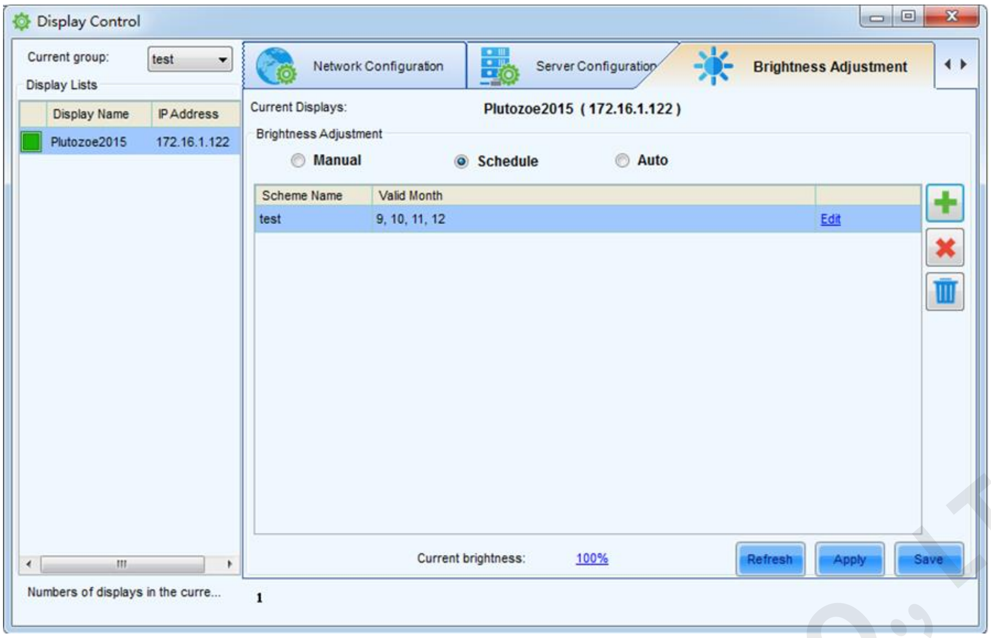
☐ Select all

☐ Jan. ☑ Feb. ☐ Mar.

☑ Apr. ☑ May ☐ Jun.

☐ Jul. ☐ Aug. ☑ Sept.

☐ Oct. ☐ Nov. ☐ Dec.


Display Control
Display Lists
Network Configuration
Server Configuration
Brightness Adjustment
Refresh
Apply
Save

Current group: test

	Display Name	IP Address
🟩	Plutozoe2015	172.16.1.122

Numbers of displays in the curre... 1

Current Displays: Plutozoe2015（172.16.1.122）

Brightness Adjustment

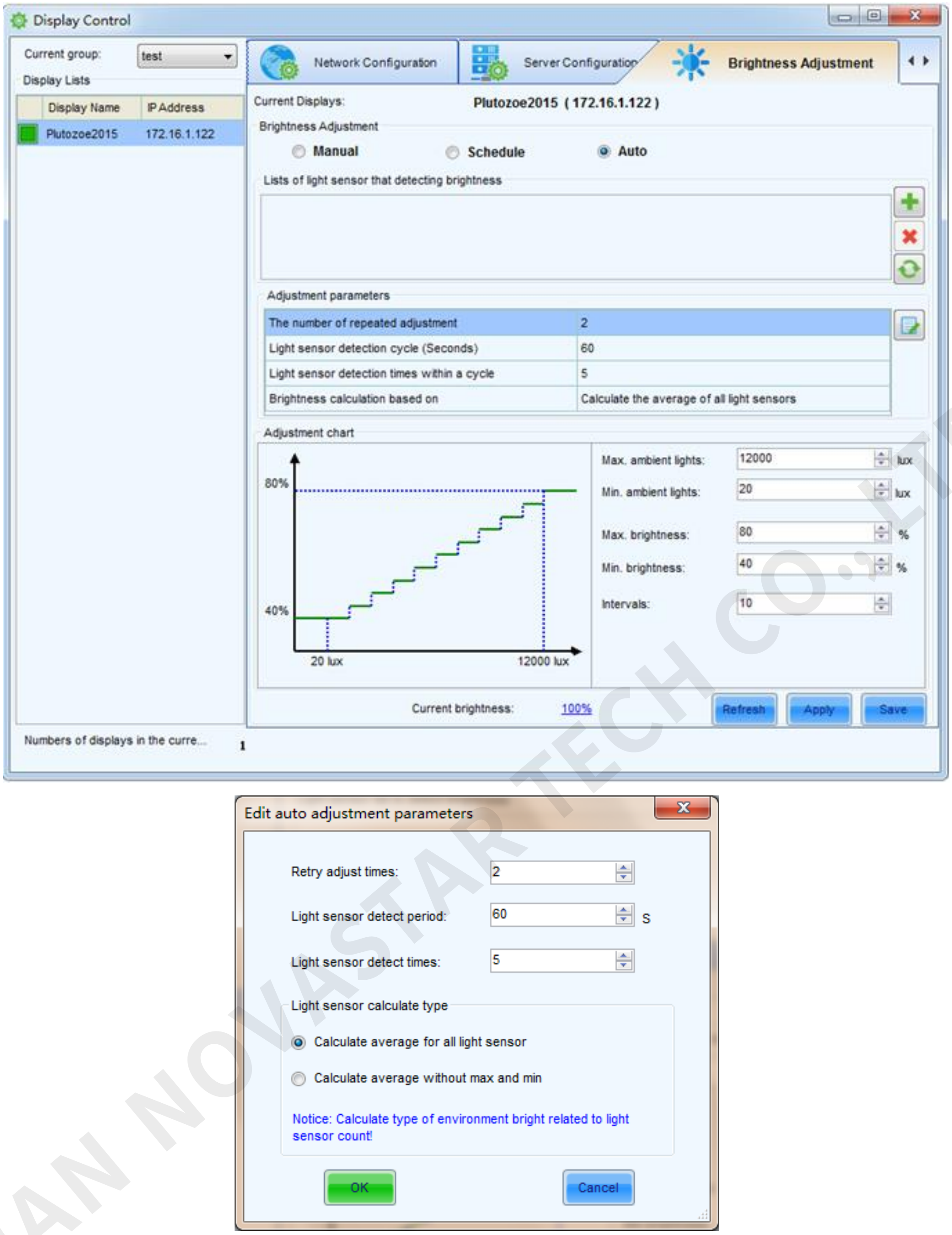
○ Manual ● Schedule ○ Auto

Scheme Name	Valid Month	
test	9, 10, 11, 12	Edit

Current brightness: 100%

Fig. 10-95 schedule adjustment

10.6.4.3 Automatic Brightness


Display Control
Network Configuration
Server Configuration
Brightness Adjustment
Refresh
Apply
Save
Edit auto adjustment parameters
OK
Cancel

Current group: test

Display Lists

Display Name	IP Address
Plutozoe2015	172.16.1.122

Numbers of displays in the curre... 1

Current Displays: Plutozoe2015 (172.16.1.122)

Brightness Adjustment

○ Manual ○ Schedule ● Auto

Lists of light sensor that detecting brightness

Adjustment parameters

The number of repeated adjustment	2
Light sensor detection cycle (Seconds)	60
Light sensor detection times within a cycle	5
Brightness calculation based on	Calculate the average of all light sensors

Adjustment chart

Max. ambient lights: 12000 lux

Min. ambient lights: 20 lux

Max. brightness: 80 %

Min. brightness: 40 %

Intervals: 10

Current brightness: 100%

Retry adjust times: 2

Light sensor detect period: 60 S

Light sensor detect times: 5

Light sensor calculate type

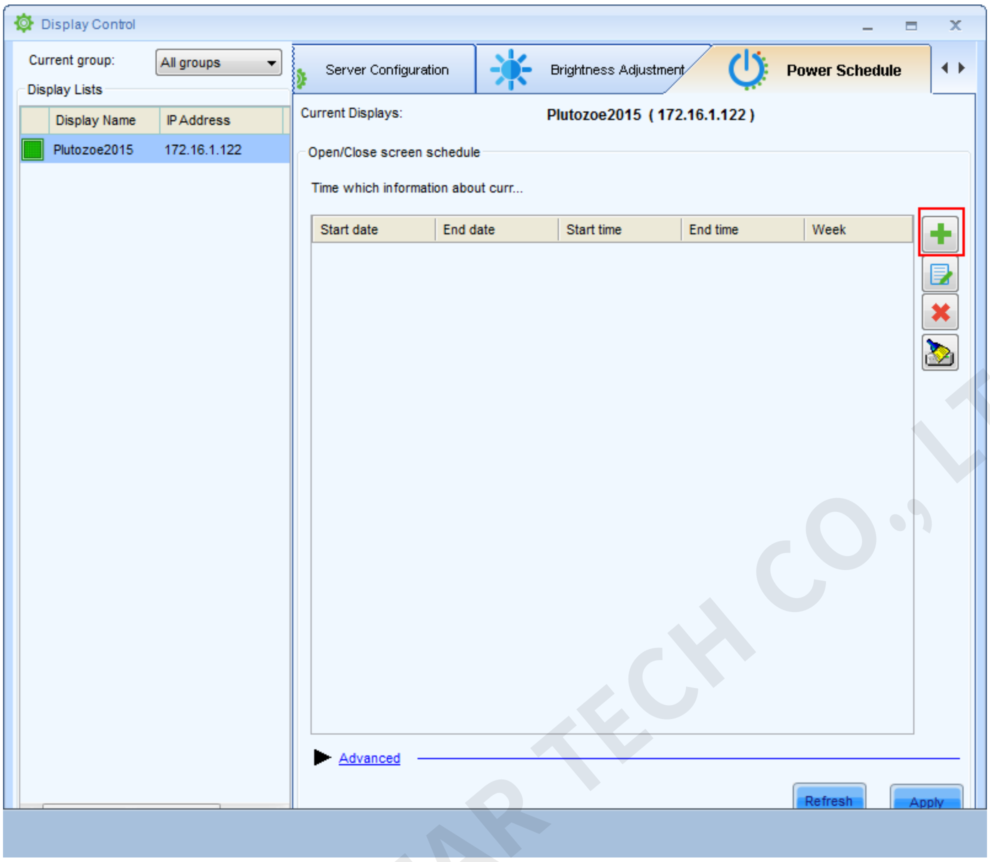
● Calculate average for all light sensor

○ Calculate average without max and min

Notice: Calculate type of environment bright related to light sensor count!

Fig. 10-96 Auto adjustment

10.7 Power Schedule


Display Control
Server Configuration
Brightness Adjustment
Power Schedule
Open/Close screen schedule
Time which information about curr...
Advanced
Refresh
Apply

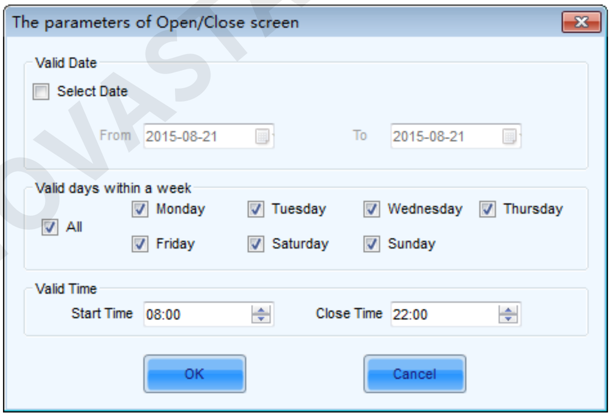
Current group: All groups

Display Lists

Display Name	IP Address
Plutozoe2015	172.16.1.122

Current Displays: Plutozoe2015 (172.16.1.122)

Start date	End date	Start time	End time	Week


The parameters of Open/Close screen
Valid Date
Valid days within a week
Valid Time
OK
Cancel

☐ Select Date

From 2015-08-21 To 2015-08-21

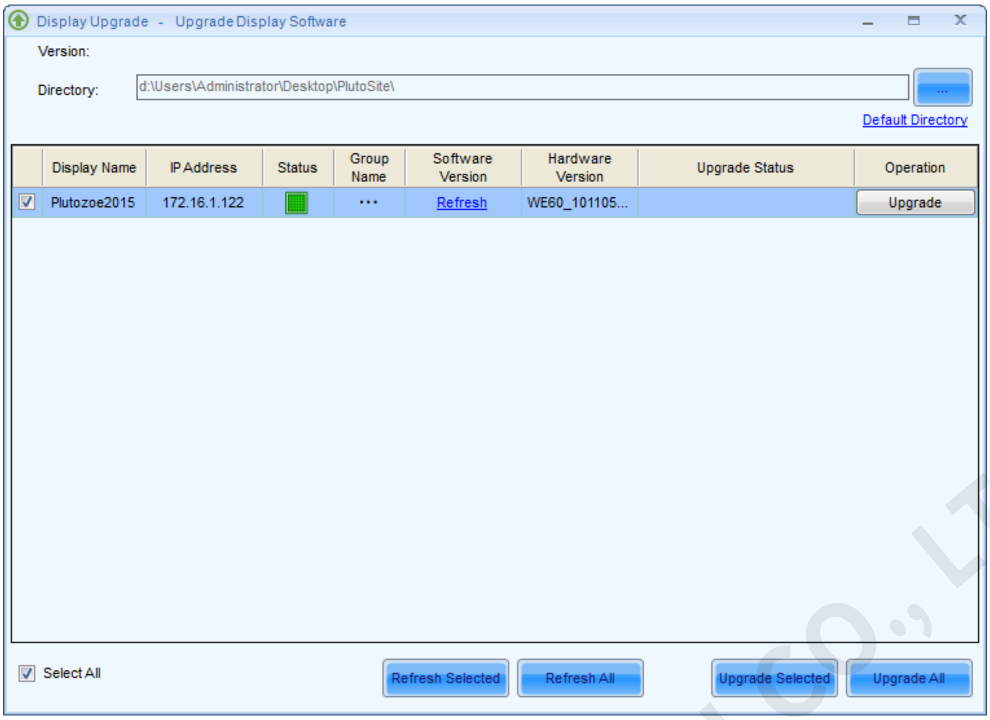
☑ All ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Start Time 08:00 Close Time 22:00

10.8 Online Upgrade

Operating steps of online upgrade of Pluto client software:

1) Press **Operation** in PlutoManager main interface, select **Display Upgrade**, to enter below page. You can refresh to check the version of the selected display, or click "Refresh All" to refresh all the displays.


Display Upgrade - Upgrade Display Software
...
Default Directory
Refresh Selected
Refresh All
Upgrade Selected
Upgrade All

Version:

Directory: d:\Users\Administrator\Desktop\PlutoSite\

	Display Name	IP Address	Status	Group Name	Software Version	Hardware Version	Upgrade Status	Operation
☑	Plutozoe2015	172.16.1.122	🟩	···	Refresh	WE60_101105...		Upgrade

☑ Select All

Fig. 10-97 Online upgrade of Pluto client software

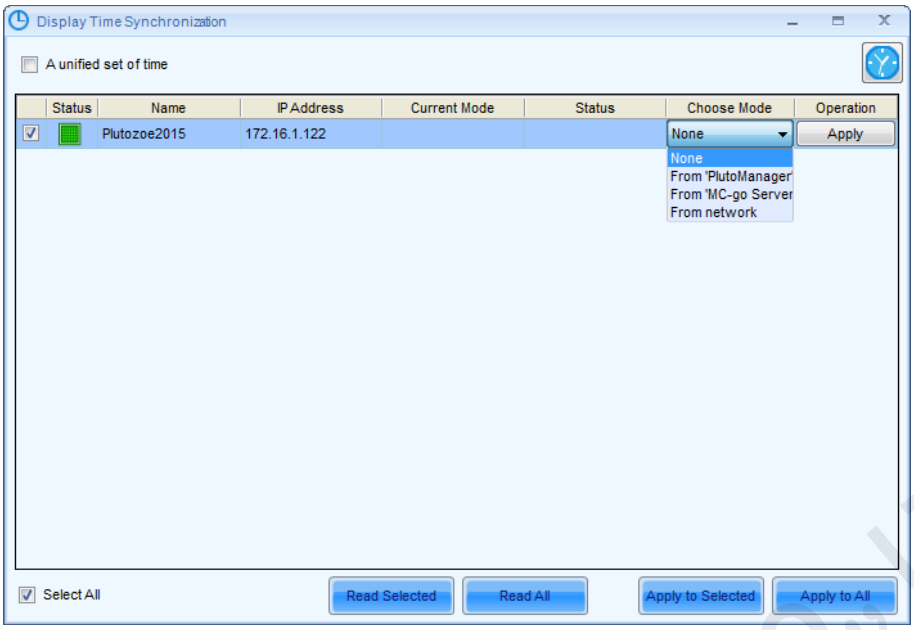
2) Click ... to select path of upgrade package.

3) Upgrading of one display or all displays is optional.

10.9 Time Synchronization

Keep the time of display consistent with that of the control computer, server, or display network through the time synchronization.

1) Click **operationin** the main interface→**Time Synchronization**, to open the Display Time Synchronization window.



☐ A unified set of time

	Status	Name	IP Address	Current Mode	Status	Choose Mode	Operation
☑	🟩	Plutozoe2015	172.16.1.122			None	Apply

Choose Mode options: None, From 'PlutoManager', From 'MC-go Server, From network

☑ Select All

Fig. 10-98 Time Synchronization

A unified set of time: Check the option to conduct the unified setting of all displays.

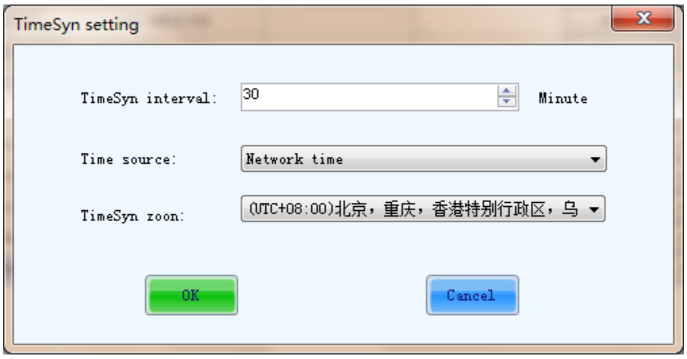
Time synchronization mode:

- **From PlutoManager:** keep the time of display consistent with that of the PlutoManager computer (i.e. control computer)
- **From MC-go Server:** keep the time of terminal consistent with that of Cloud server, if the Cloud platform is used.
- From network: time acquisition of display is from the network.
- Read Selected / Read All: readback the current mode of the selected or all displays.

Apply to Selected/ Apply to all: Apply the time of the selected or all display to current settings.

2) Select the time synchronization mode for the display and apply to display.

3) Click button for time setting. Click **OK** when finish.



TimeSyn interval: 30 Minute

Time source: Network time

TimeSyn zoon: (UTC+08:00)北京，重庆，香港特别行政区，乌

Fig. 10-99 TimeSyn setting

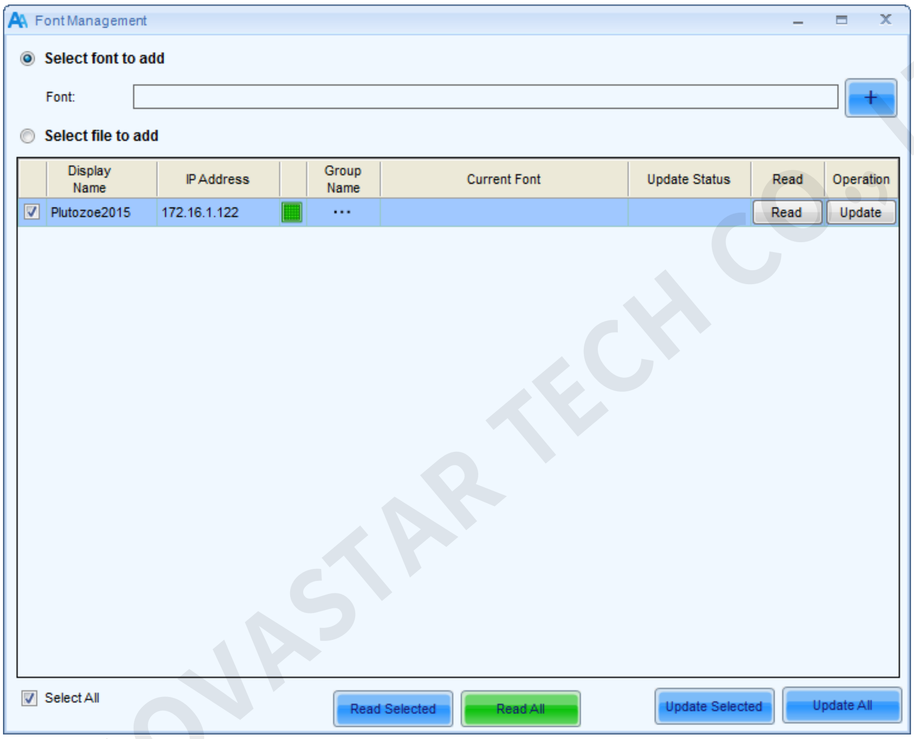
TimeSyn interval : For setting the time period according to which terminals' time will be checked and reset.

Time source: Optional network time or computer time.

TimeSyn zone: For time zone setting.

10.10 Font Management

Read and update current font of the display.



● Select font to add

○ Select file to add

	Display Name	IP Address		Group Name	Current Font	Update Status	Read	Operation
☑	Plutozoe2015	172.16.1.122	🟩	···			Read	Update

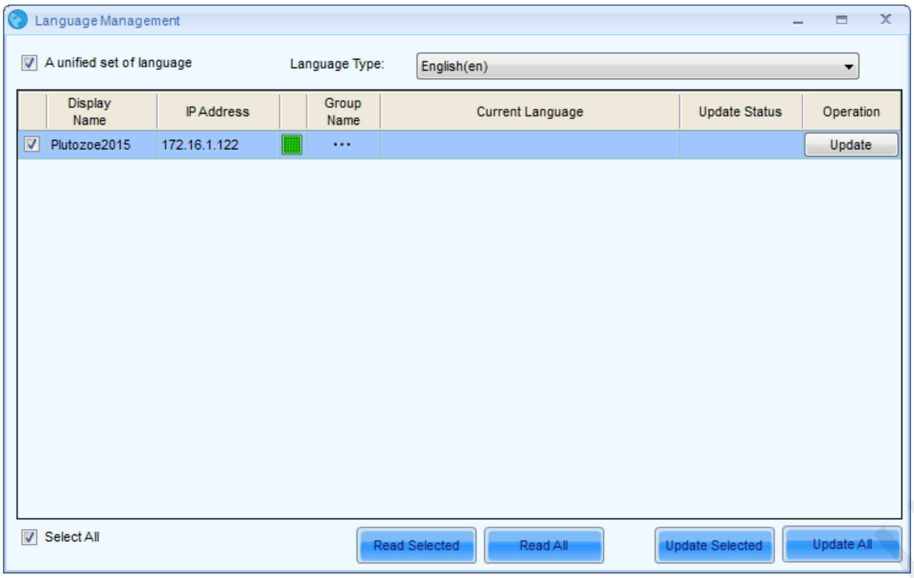
☑ Select All

Fig. 10-100 Font Management

10.11 Language Management

Update the terminal's language.

Tick "**Uniform Setting of Terminal Language**" to select language type, and then click "**Update All**" to update the language of all terminals.


Language Management

☑ A unified set of language   Language Type: English(en)

	Display Name	IP Address		Group Name	Current Language	Update Status	Operation
☑	Plutozoe2015	172.16.1.122	🟩	···			Update

☑ Select All
Read Selected
Read All
Update Selected
Update All

Fig. 10-101 Language Management

11 Display Authorization

Encrypt the specified client, and the encrypted client cannot be connected at will by any other people so as to protect the play security of client display.

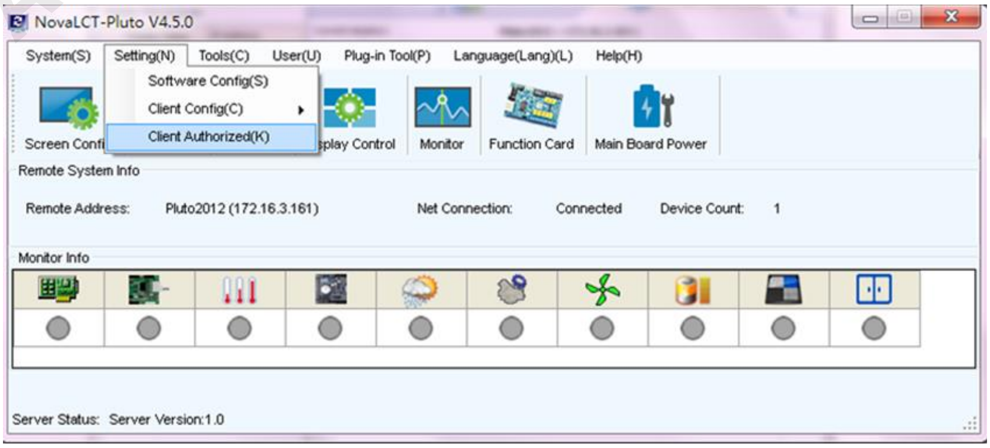
11.1 Authorization

Authorization of the display can be conducted in two ways.

Way I: NovaLCT-Pluto terminal authorization

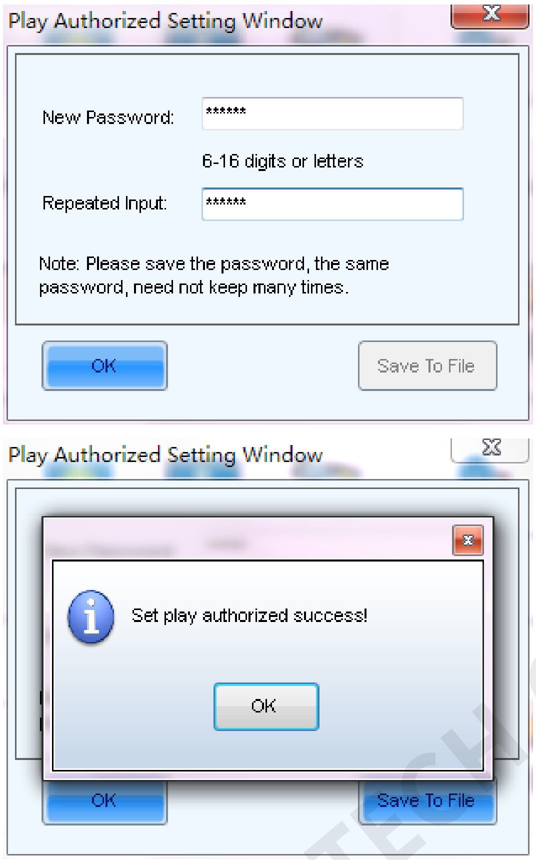
1) Password authorization

In the NovaLCT-Pluto main interface, click on【Setting】→【Client Authorized】, and enter password in the Play Authorized Setting Window , and then click on【OK】.


NovaLCT-Pluto V4.5.0
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Config(S)
Client Config(C)
Client Authorized(K)
Screen Confi
splay Control
Monitor
Function Card
Main Board Power
Remote System Info
Monitor Info

Remote Address: Pluto2012 (172.16.3.161)   Net Connection: Connected   Device Count: 1

Server Status: Server Version:1.0



Play Authorized Setting Window

New Password: ******

6-16 digits or letters

Repeated Input: ******

Note: Please save the password, the same password, need not keep many times.

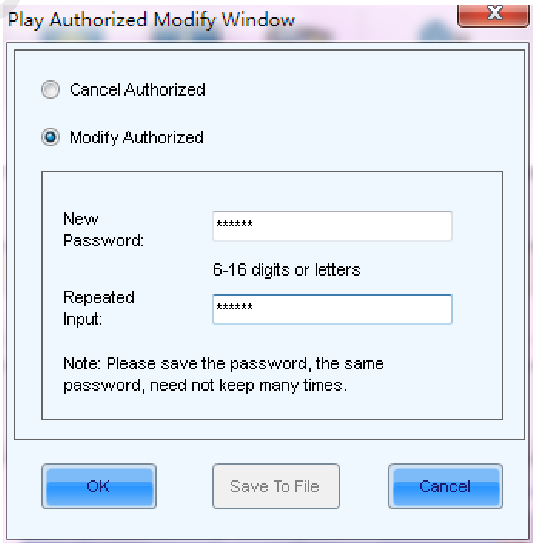
Play Authorized Setting Window

Set play authorized success!

Fig. 11-1 Play Authorized Setting

2) Modify authorized

In the Play Authorized Modify Window, tick【Modify Authorized】, enter the newest password , and click on 【OK】. And then, save the authorized file, and it is better to cover the previous authorized file of this client.



Play Authorized Modify Window

○ Cancel Authorized

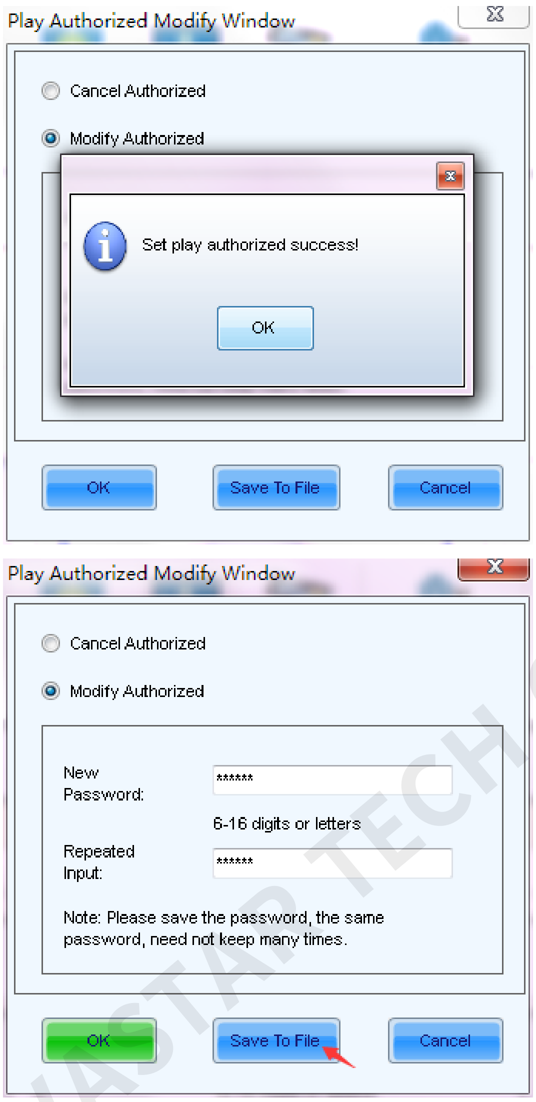
● Modify Authorized

New Password: ******

6-16 digits or letters

Repeated Input: ******

Note: Please save the password, the same password, need not keep many times.



Play Authorized Modify Window

○ Cancel Authorized

● Modify Authorized

Set play authorized success!

Play Authorized Modify Window

○ Cancel Authorized

● Modify Authorized

New Password: ******

6-16 digits or letters

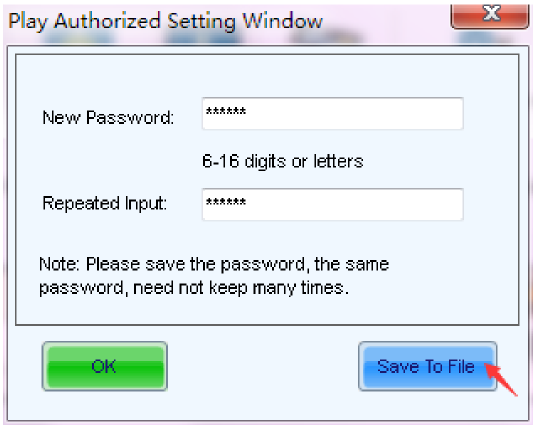
Repeated Input: ******

Note: Please save the password, the same password, need not keep many times.

Fig. 11-2 Modify Authorized

3) Generating authorization documents

Once the password is set, click on 【Save to File】, to save the authorized file to the specified directory（it is recommended to set a name allowing rapid identification as per clients for the authorized file）.



Play Authorized Setting Window

New Password: ******

6-16 digits or letters

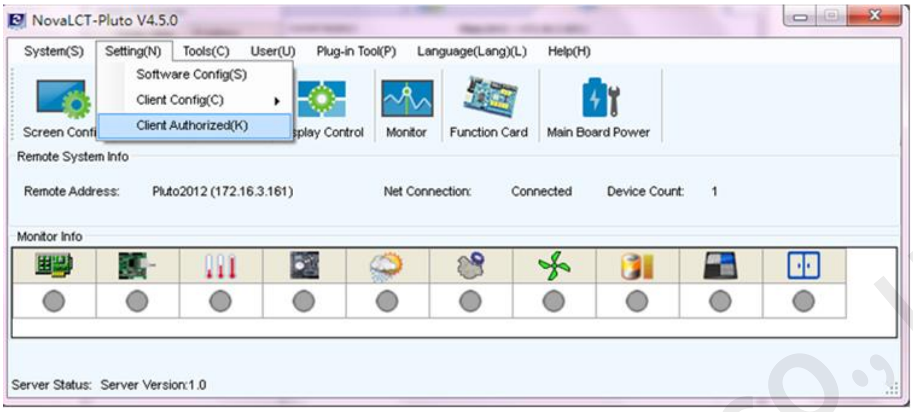
Repeated Input: ******

Note: Please save the password, the same password, need not keep many times.

Fig. 11-3 Saving Authorized File

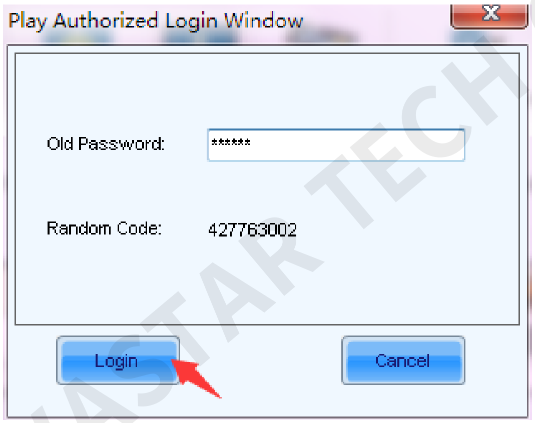
4) Cancel authorized

In the NovaLCT-Pluto main interface, click on【Setting】→【Client Authorized】,and at this moment, it is required to enter password again，and then tick【Cancel Authorized】, and click on【OK】to cancel authorized.


NovaLCT-Pluto V4.5.0
System(S)
Setting(N)
Tools(C)
User(U)
Plug-in Tool(P)
Language(Lang)(L)
Help(H)
Software Config(S)
Client Config(C)
Client Authorized(K)
Screen Confi
play Control
Monitor
Function Card
Main Board Power
Remote System Info
Monitor Info

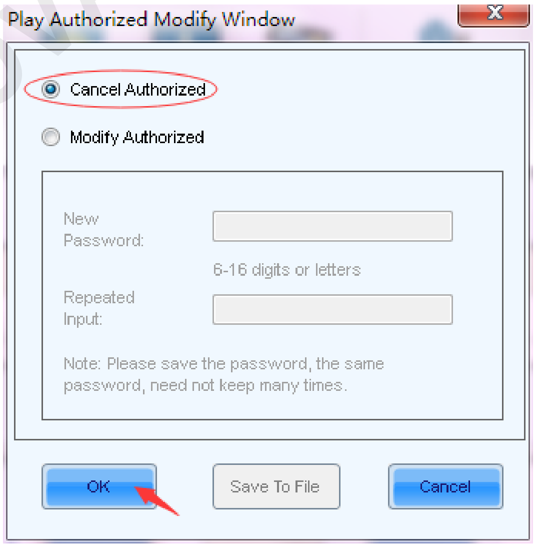
Remote Address: Pluto2012 (172.16.3.161)
Net Connection: Connected
Device Count: 1

Server Status: Server Version:1.0


Play Authorized Login Window
Login
Cancel

Old Password: ******

Random Code: 427763002


Play Authorized Modify Window
OK
Save To File
Cancel

● Cancel Authorized

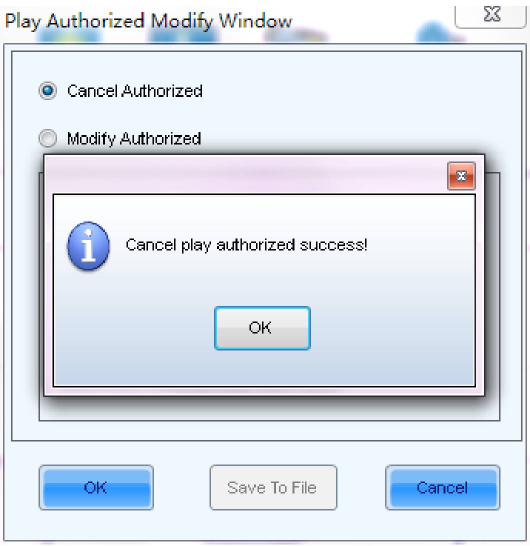
○ Modify Authorized

New Password:

6-16 digits or letters

Repeated Input:

Note: Please save the password, the same password, need not keep many times.



Cancel play authorized success!

Fig. 11-4 Cancel Authorized

Way II: PlutoManager terminal authorization

See 10.5.2.3 Client password configuration for the specific operations.

11.2 Authorized Decryption

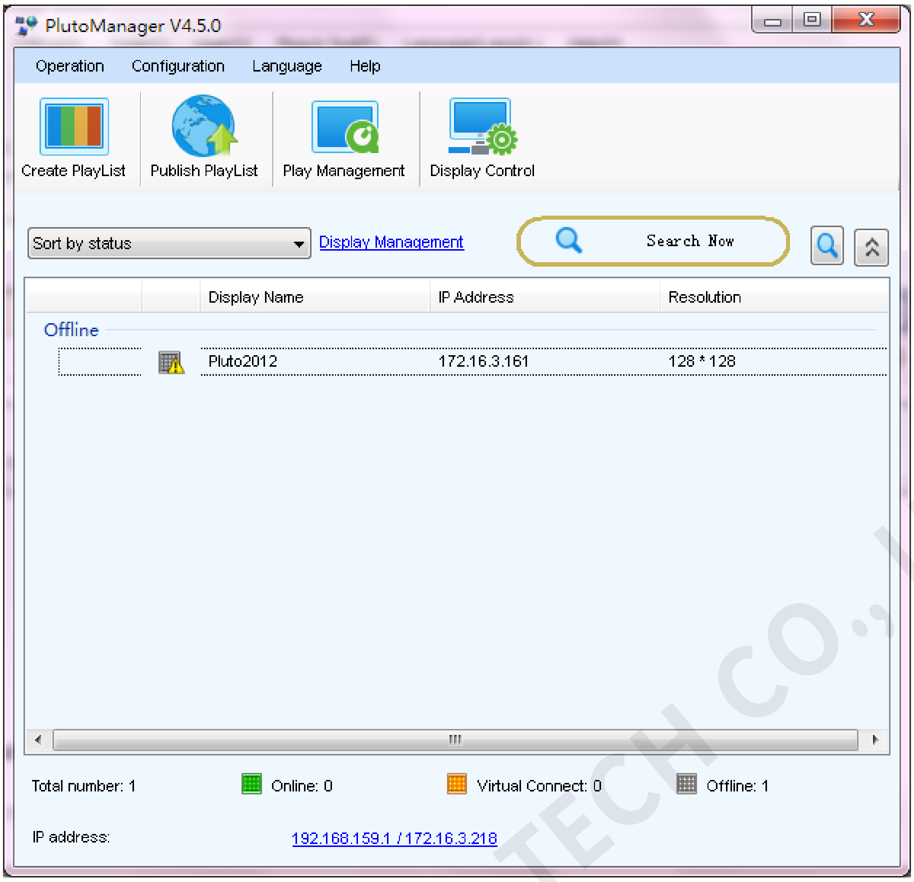
1) NovaLCT

It shall be input the correct password when connecting the authorized terminal.

2) PlutoManager authorization configuration

If the terminal is set with a password or the password has been changed, then, the user has to input the latest password or import the corresponding authorization document into PlutoManager; otherwise the connection error may occur.

For example：previously, authorization has been set for LYZ，and in PlutoManager client list, you may see that this client displays abnormal connection.


PlutoManager V4.5.0
Operation
Configuration
Language
Help
Create PlayList
Publish PlayList
Play Management
Display Control
Sort by status
Display Management
Search Now
Display Name
IP Address
Resolution
Offline

Display Name	IP Address	Resolution
Pluto2012	172.16.3.161	128 * 128

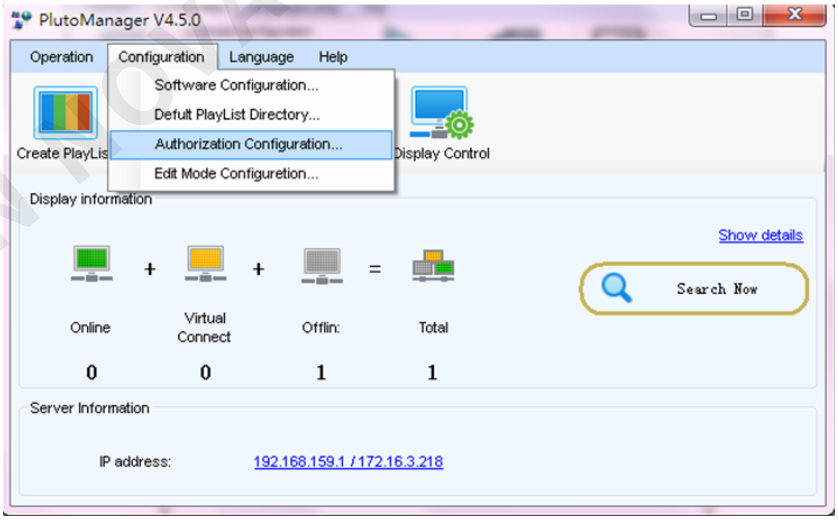
Total number: 1　Online: 0　Virtual Connect: 0　Offline: 1

IP address: 192.168.159.1 / 172.16.3.218

Fig. 11-5 Display Status of Client without Authorization Configuration

Solutions:

In the software main interface, click on【Configuration】→【Authorize file】, as shown below:


PlutoManager V4.5.0
Operation
Configuration
Language
Help
Software Configuration...
Defult PlayList Directory...
Authorization Configuration...
Edit Mode Configuretion...
Create PlayLis
Display Control
Display information
Show details
Search Now
Online
Virtual Connect
Offlin
Total
Server Information

Online 0 + Virtual Connect 0 + Offlin 1 = Total 1

IP address: 192.168.159.1 / 172.16.3.218

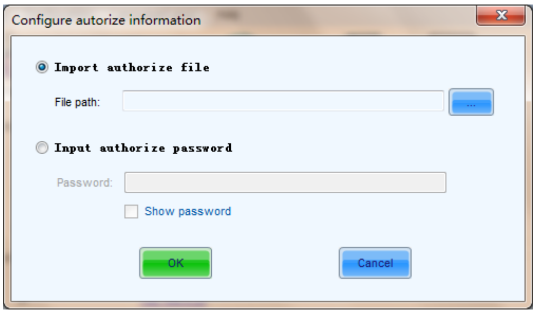
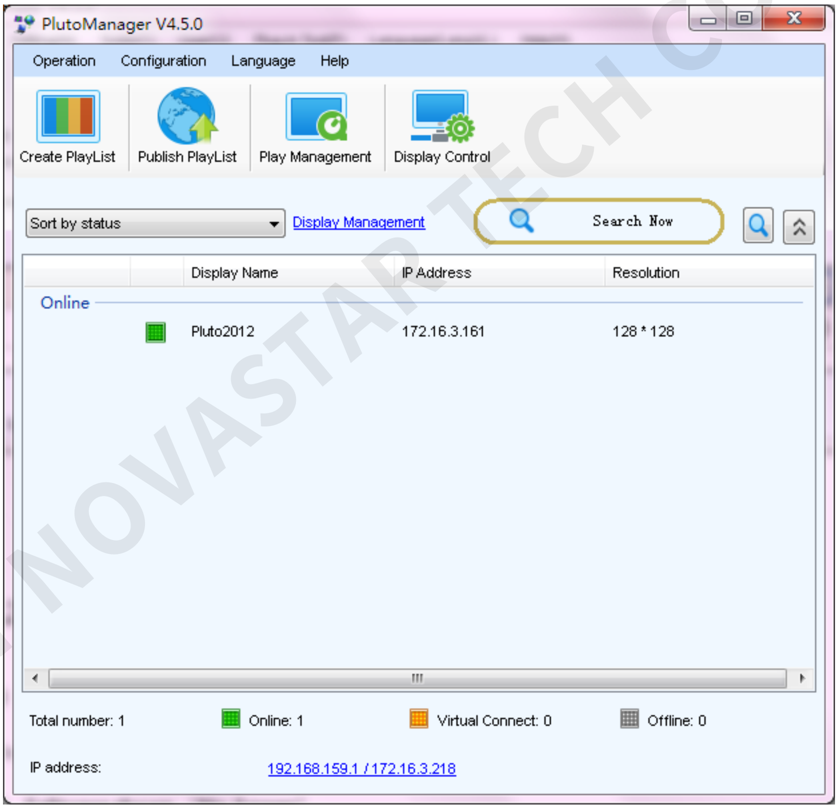

Configure autorize information
● Import authorize file
File path:
...
○ Input authorize password
Password:
☐ Show password
OK
Cancel

Fig. 11-6 Configure Authorization Information

Way I: Select "Import authorize file" option , then click on ... to import authorized file of LYZ, and click on "OK".

WayⅡ: Select "Input authorize password" option, and click on "OK".

After importing the authorized file, the display status of this client is normal, as shown below:


PlutoManager V4.5.0
Operation
Configuration
Language
Help
Create PlayList
Publish PlayList
Play Management
Display Control
Sort by status
Display Management
Search Now
Online

	Display Name	IP Address	Resolution
🟩	Pluto2012	172.16.3.161	128 * 128

Total number: 1 🟩 Online: 1 🟧 Virtual Connect: 0 ▦ Offline: 0

IP address: 192.168.159.1 / 172.16.3.218

Fig. 11-7 Client Display after Authorization Configuration

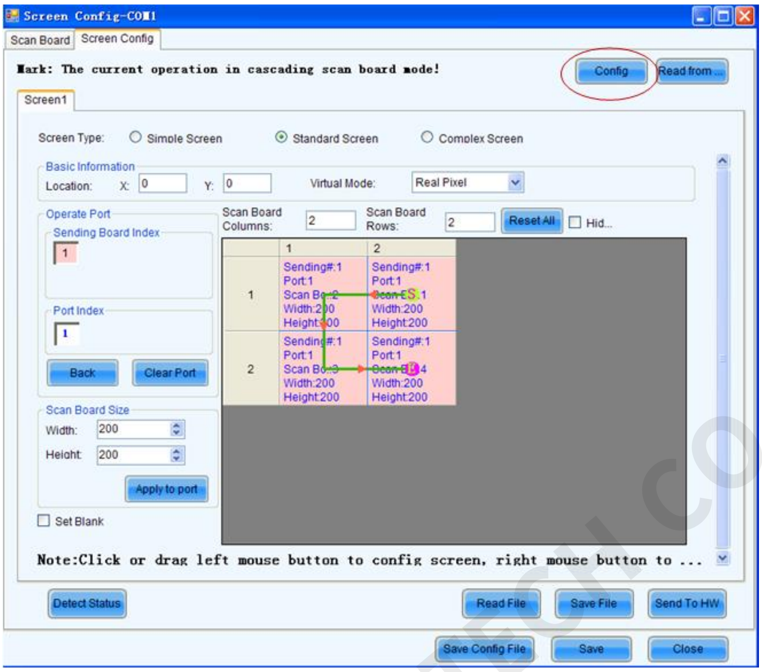
12 Frequently Asked Questions

1) Software shows “No Hardware”

Please check whether all the clients that currently connected are electrified.

2) Software shows “No Screen”

If the LED display has been configured already, then try to read the configurations from the display by click **Read from HW** button in the Screen Configuration page, as shown in Fig.12-1. If the display has not been configured yet, please configure it first.


Screen Config-COM1
Scan Board
Screen Config
Config
Read from ...
Screen1
Basic Information
Operate Port
Sending Board Index
Port Index
Back
Clear Port
Scan Board Size
Apply to port
Set Blank
Reset All
Hid...
Detect Status
Read File
Save File
Send To HW
Save Config File
Save
Close

Mark: The current operation in cascading scan board mode!

Screen Type: ○ Simple Screen ● Standard Screen ○ Complex Screen

Location: X: 0 Y: 0 Virtual Mode: Real Pixel

Scan Board Columns: 2 Scan Board Rows: 2

Width: 200

Height: 200

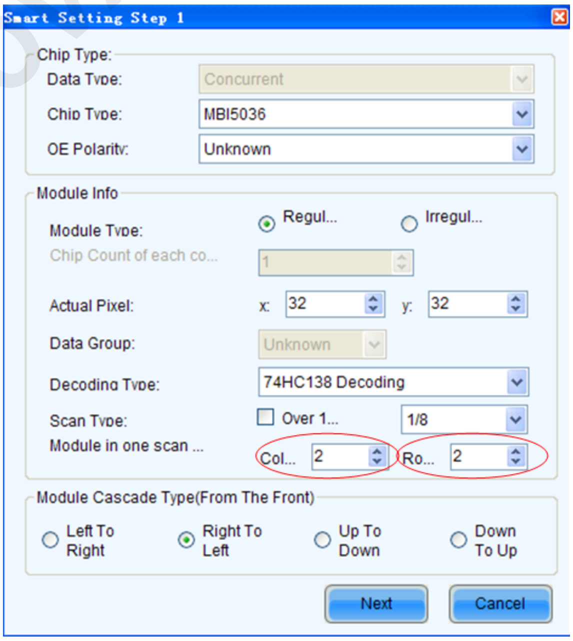
☐ Set Blank

Note:Click or drag left mouse button to config screen, right mouse button to ...

Fig. 12-1 Read LED display info. from hardware

3) Only part of the modules of each cabinet work normally in Smart Setting

Please check whether the size of the module array is correctly set in the page of Smart Setting Step 1 as shown in Fig. 12-2.


Smart Setting Step 1
Chip Type:
Module Info
Module Cascade Type(From The Front)
Next
Cancel

Data Type: Concurrent

Chip Type: MBI5036

OE Polarity: Unknown

Module Type: ● Regul... ○ Irregul...

Chip Count of each co... 1

Actual Pixel: x: 32 y: 32

Data Group: Unknown

Decoding Type: 74HC138 Decoding

Scan Type: ☐ Over 1... 1/8

Module in one scan ... Col... 2 Ro... 2

○ Left To Right ● Right To Left ○ Up To Down ○ Down To Up

Fig. 12-2 Smart setting step 1

13 Document Version Statement

Version	Date	Update description
Nova Pluto Asynchronous Control System User Manual-V1.0	Sept. 25, 2012	Initial edition
Nova Pluto Asynchronous Control System User Manual-V2.0	Dec. 25.2012	NovaLCT-Pluto-V3.4.2 PlutoManager V2.0.2
Nova Pluto Control System User Manual-V3.0		NovaLCT-Pluto-V4.0.0 PlutoManager V3.4.0
Nova Pluto Control System User Manual-V4.0		NovaLCT-Pluto-V4.0.2 PlutoManager V3.4.2 ManageCenterV3.4.1
Nova Pluto Control System User Manual-V4.3.0	Feb.17.2014	NovaLCT-Pluto-V4.3.0 PlutoManager V4.3.0
Nova Pluto Control System User Manual-V4.4.0	June 17th .2014	NovaLCT-Pluto-V4.4.0 PlutoManager V4.4.0
Nova Pluto Control System User Manual-V4.5.0	Apr. 20th .2015	NovaLCT-Pluto-V4.5.0 PlutoManager V4.5.0
Nova Pluto Control System User Manual V4.5.2	August 18, 2015	NovaLCT-Pluto-4.5.1 PlutoManager 4.5.2