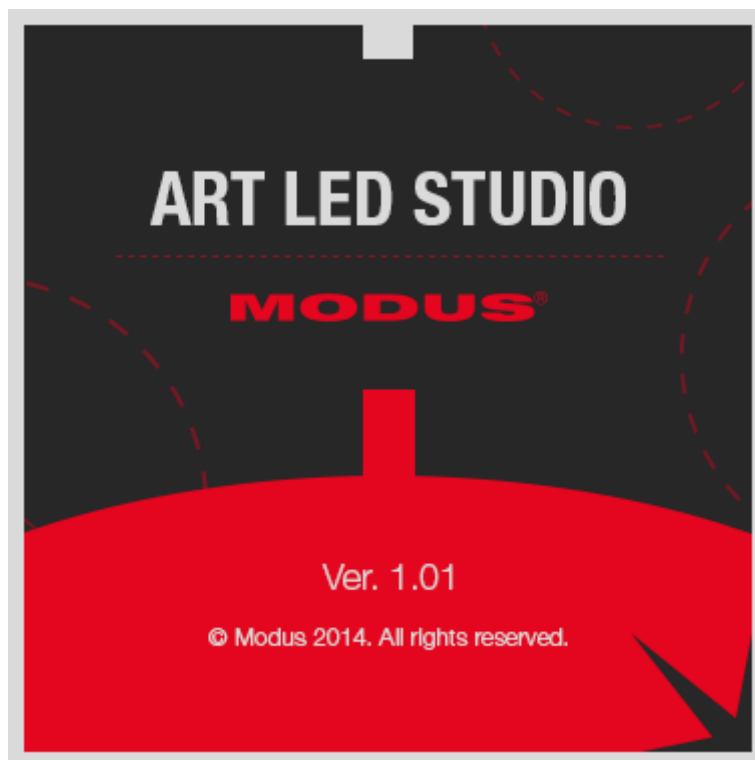


# ART LED STUDIO



## Art Led Studio software

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V3.1

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Should you have any comments please let us know.  
We will be grateful for all suggestions to help us to  
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## 1. Chapter One: Overview

### 1.1. Characteristic:

《ART LED Studio software》 is a set of software with powerful functions: It is easy to use and learn and the wiring is flexible; supports mixture and irregular connection of various kinds of lamps(different lamps are allowed to work together).Supports many file formats: text files, MS Office files(DOC,RTF,XLS,PPT), all picture files

( BMP,JPG,GIF,PCX,WMF,ICO,PNG. . . ) , and all animation files (SWF, AVI, WMV, MPG, MPEG, ASF, MPV, MPA, VCD, RM, RA, RMJ. . . . The files are switched quickly and can be played in the specified period of time.

### 1.2. Running Environment

- Operating system
  - Windows XP, Windows Vista, Windows7
- Hardware requirements
  - CPU: 1.5GHz
  - Memory: 512M
  - Network card: 100M.
  - Graphics card: With HDMI or DVI interface
- Related software
  - Storm codec
  - MS OFFICE2000—when office file is needed.

## 2. Chapter Two: Instruction in details

### 2.1. Program Composition

Program (Program document) consists of one or several program pages, which are played in sequence.

Program page consists of one or several program windows, which are used to display documents, pictures, cartoons, multimedia segments, etc. There are seven program windows: file window, text window, and video input window, date/time window, timer window, web window and pattern window.

- **File window:** can play maximum dozens of files such as words, pictures, cartoons and forms.

- **Text window:** for rapid text entry. Single line text, multiple lines text, and static texts can all be played.
- **Video input window:** for displaying signal from Video capture card.
- **Date/Time window:** for displaying date and time
- **Timer window:** for timing. Support clockwise and anti-clockwise timing.
- **Web window:** for embedding web in window and playing.
- **Design window:** for playing design.

## 2.2. Interface Window Introduction

“ART LED Studio Software” consists of two windows: Play window and control window.  
(Interface shown as Figure 2-1)



Figure 2-1

### Play Window

Play Window (Namely the contents displayed on LED screen) is for displaying files, pictures, cartoons, multi-media fragments and so on. Contents displayed in play window are synchronized with those displayed on the LED screen.

**Control window**

Control window is for controlling the playing status of contents in playing area. Control window can expand to edit window, and it contains Menu bar, Toolbar and Edit widget, a control window with Edit widget is shown below:

- **Menu bar:** Includes 5 sub-menus: file, control, setting, tool, and help.
- **Toolbar:** shortcut key of menu.
- **Edit widget:** consists of two parts. The left program options display the program and sub-window information; the right control options control the design, time and so on.

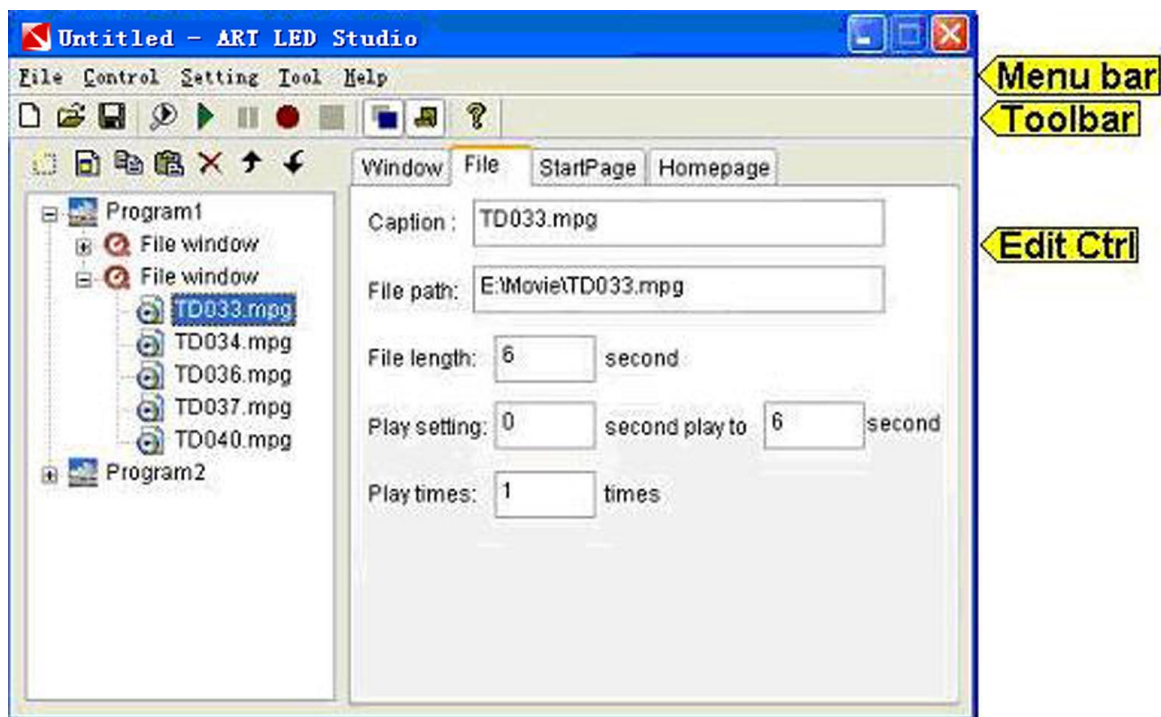


Figure 2-2

**2.3. Features introduction**

**2.3.1. Menu**

Include file, control, setting, tool, and help.

**File Menu:** as shown in Figure 2-3, include New, Open, Save, Save as, Pack File, Open recently used files and Exit.

- **New:** create a new ART LED Studio file.
- **Open:** open a recently finished ART LED Studio file and multi-media file.
- **Save:** save the current ART LED Studio file.



- Save as: save the current ART LED Studio file as a new ART LED Studio file.
- Pack File: package the current ART LED studio files into a new folder.
- Open recently used file: open recently used ART LED Studio files.
- Exit: exit ART LED Studio software.

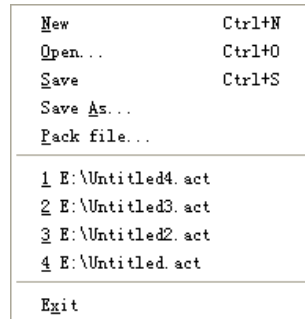


Figure 2-3

**Control Menu:** As shown in Figure 2-4, include preview, play, play from first, play screenshots, play background, pause, record, stop, score manager, Media Player visual effect, expand or furl.

- Preview: preview the playing content of current window.
- Play: play the current ART LED Studio file.
- Play from first: play from the first file.
- Play screenshots: play screenshots displayed in screen
- Play background: the play window is invisible in screen
- Pause: suspend playing ART LED Studio file.
- Record: record the playing content as AVI file.
- Stop: stop playing ART LED Studio File.
- Score manager: play embedded scores.
- Media Player visual effect: play Media player visual effect.
- Expand or furl: expand or furl the control window.

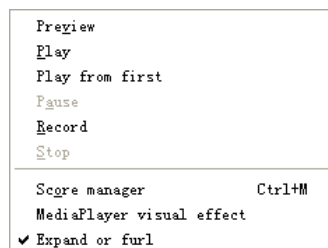


Figure 2-4

**Setting Menu:**

As shown in Figure 2-5, the setting menu includes play window setting, language, LED project sculpt, system setting, REC AVI option, and link console.

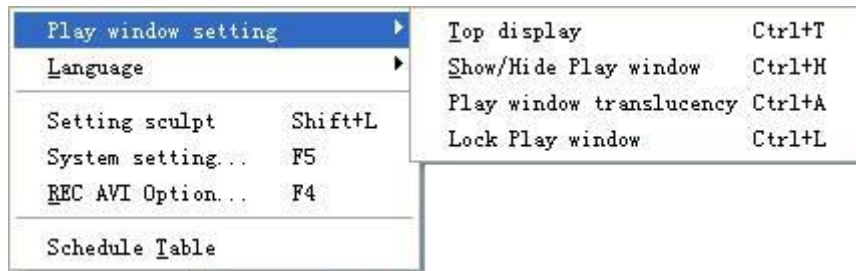


Figure 2-5

- Play window setting: set the play window.
  - Top display: play window shown on top layer.
  - Show/Hide Play window: show or hide play window.
  - Play window translucency: set window translucency or not.
  - Lock Play window: lock play window or not. Under locked condition, play window cannot be moved and the size cannot be changed.
- Language: set language of software.
- Setting sculpt: set the lighting route and type of lamp.
- System setting: set parameters of hardware and software (refer to chapter 13)
- REC AVI Option: set parameters when recording AVI file.
- Schedule Table: execute timing task.

**Tool Menu:**

As shown in Figure 2-6, it includes Gray test, Gridding test, Control panel, Calculator, Paint program, Notepad program, Word program, Excel program, PowerPoint program, and Display property.

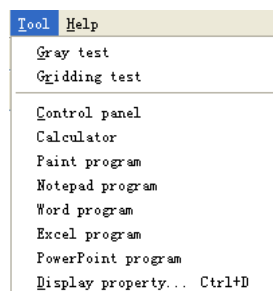


Figure 2-6

- Grey test: operate grey test on LED lamps.
- Gridding test: test whether screen displays correctly or not.
- Control panel, Calculator, Paint program, Notepad program, Word program, Excel program, PowerPoint program: click the icon to start the corresponding program.
- Display property: set the parameters of graphic card.

**Help Menu:**

As shown in Figure 2-7, help menu contains Help, Testing Update, and about.

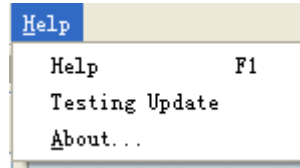


Figure 2-7

- Help: show help file.
- Testing Update: detect new version of software online and remind user to update.
- About: show the version number and copyright information of software.

**2.3.2. Toolbar**

Toolbar is shortcut of menu, as shown in Figure 2-8, the icons from left to right are: new, open, save, preview, play, pause, record, stop, show/hide display window, expend/furl, and about. Please refer to menu about the specific function.



Figure 2-8

**2.3.3. Edit widget**

Edit widget is the core part of this software, introduction in detail please refer to next section: programming flow.



**2.4. Programming flow**



**2.4.1. First step: set the size of playing window**

The size of playing window must be set correctly; otherwise it can only display part of the program.

**Setting method:** Menu—>Setting—>System setting—>Software setting. Start the software setup box, the size and position of playing window can be set in play window bar or adjusted by mouse.

**2.4.2. Step 2: Create a New Program page**

Program page is the basic element of program. As shown in Figure 2-9, click „new program page”  to create a new program page. (Note: if program page toolbar is invisible, please click „Expend/furl”  in toolbar).

There could be infinity program pages in file, delete a program page with delete button ; change the program page order with moving button . Program page is played in numerical order.

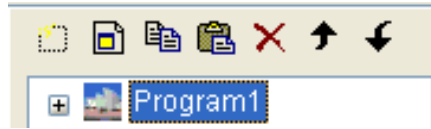


Figure 2-9

**2.4.3. Step 3: Set program page options.**

When selecting or creating a program page, can set the program page options. As shown in the following Figure, program page options include program name, time, background color, background picture, picture mode, and background music.

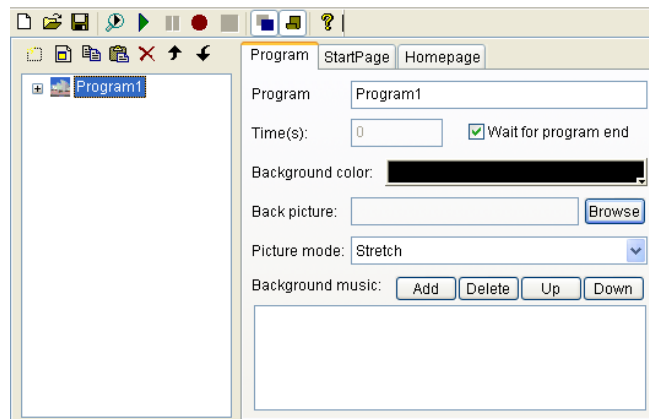



Figure 2-10

**2.4.4. Step 4: Create a new program window**

Program page is a frame that can contain many program windows. Each program window can simultaneously play different words, pictures, tables, cartoons, and videos, etc. There are seven kinds of program windows served to select. Click „create new program” , pop up a program select menu as shown in Figure 2-11.

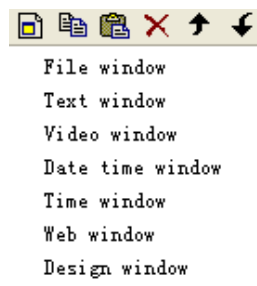


Figure 2-11

- **File window:** It is the most important window, because all supported files can be displayed in this window. You can add as many files in the window as possible. There are more than 10 kinds of files supported, which includes Text files (TXT), EXCEL files, WORD files (DOC/RTF), POWERPOINT files (PPT), all kinds of picture files (BMP/JPG/GIF/PCX/WMF/ICO), all kinds of media files (AVI/MPG/MPEG/WMV/ASF), VCD files (DAT), and Flash files (SWF).
- **Text windows:** Used for quick input of short writing. The static text is also allowed.
- **Video window:** display signal from Video input card.
- **Date Time window:** display date and time
- **Time window:** for timing, support clockwise and anti-clockwise timing.
- **Web window:** embed website into playing window to play.
- **Design window:** edit design and display.

#### 2.4.5. Step 5: Setup Program Window options

All program windows share the following options: Name, Frame, Frame color, Position, Width, and Height. The other options are illuminated as follows.

**File Window:** The window is divided into window options and file options. Window options include background color, background picture, and picture mode. File options are related to file type; the followings are the detailed introductions.

**“Text files”** The options are shown in Figure 2-13, you can change the caption, file path, display mode, and settle time, entrance time, exit time, entrance stunt, exit stunt, play times, and font. There are more than 50 kinds of alternative entrance and exit stunts.

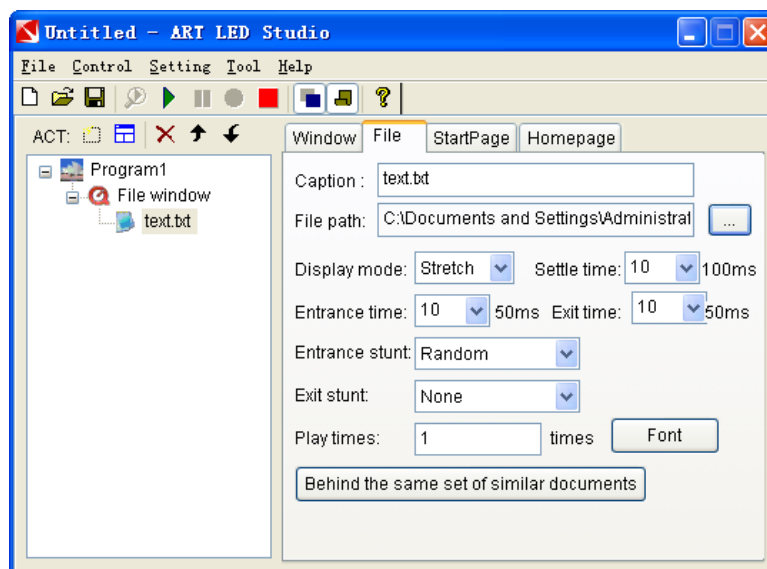


Figure 2-13

“**Word files**” is similar to text files, but has one more text display checkbox.

“**Picture files**” is similar to text files, but without front settings. Supports all picture formats (**BMP/JPG/GIF/PCX /WMF...**).

“**Video files**” includes all kinds of media files (AVI,WMV,MPG,MPEG,ASF...).

As shown in Figure 2-14, caption, file path, playing time and play times can be set.

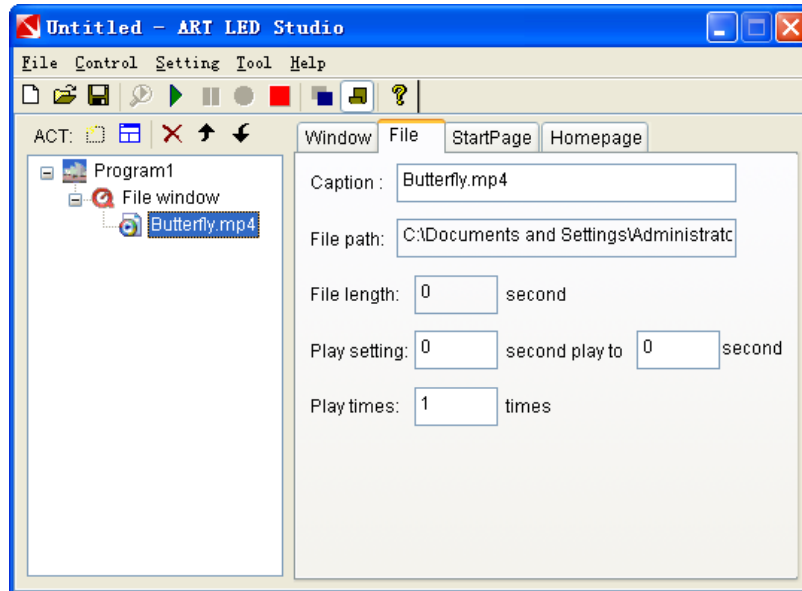
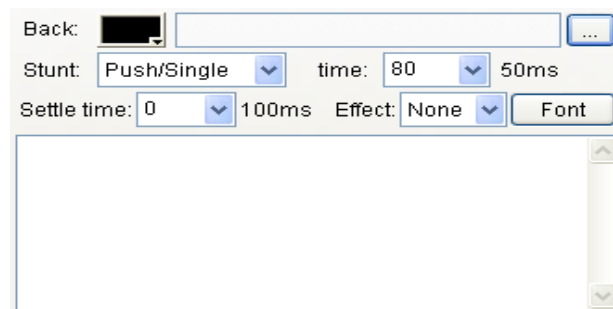


Figure 2-14

“**FLASH animation files**” (SWF) is similar to “**video files**”, but cannot set the playing period.

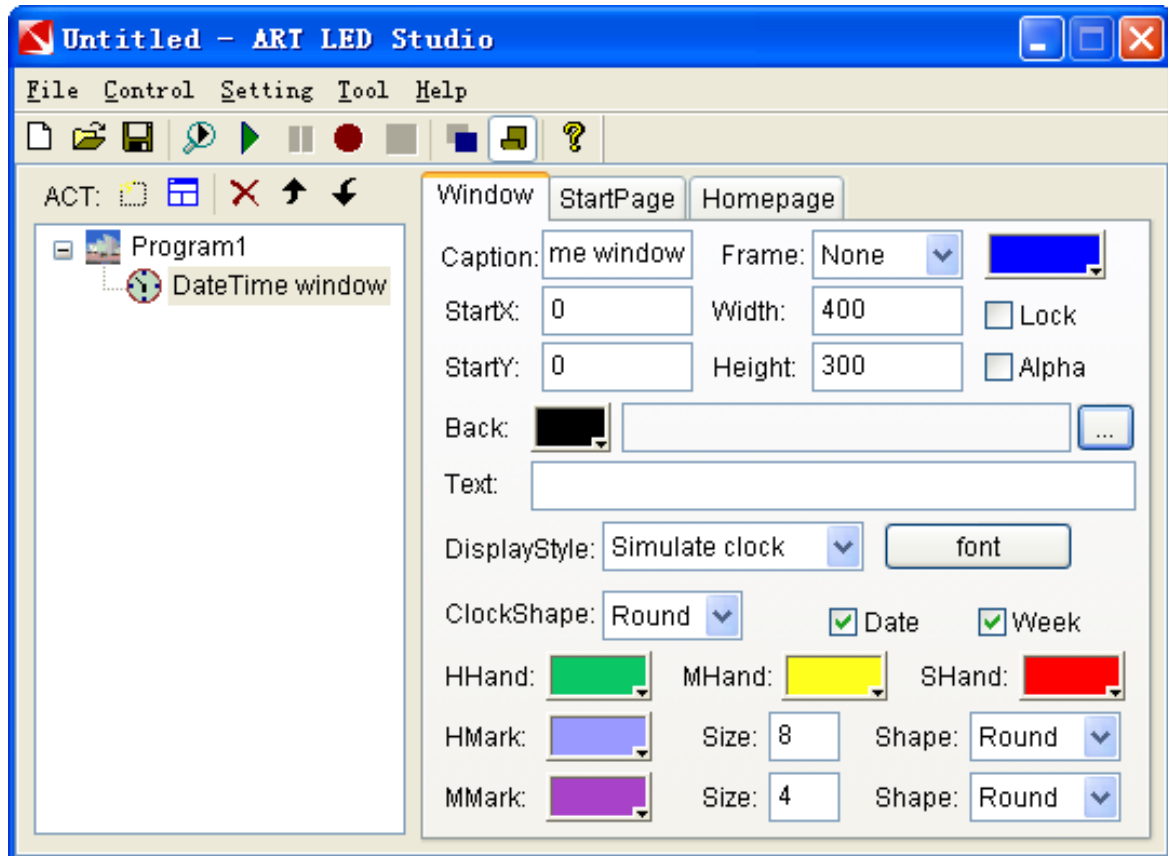


2-15

**Text windows:** as shown in Figure 2-15, can set background color, background picture, font, entrance stunt, entrance speed, settle time, and effect.

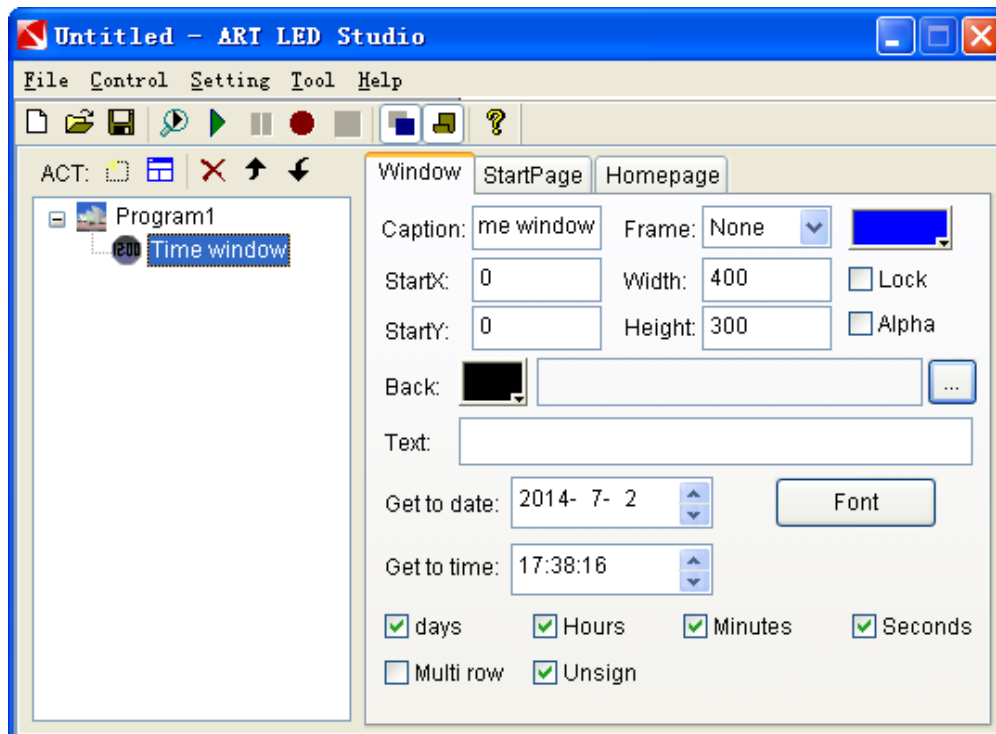
**Video window:** choose video input devices.

**Date Time window:** as shown in Figure 2-16, can set background color and picture, text, display style, font, etc.



2-16

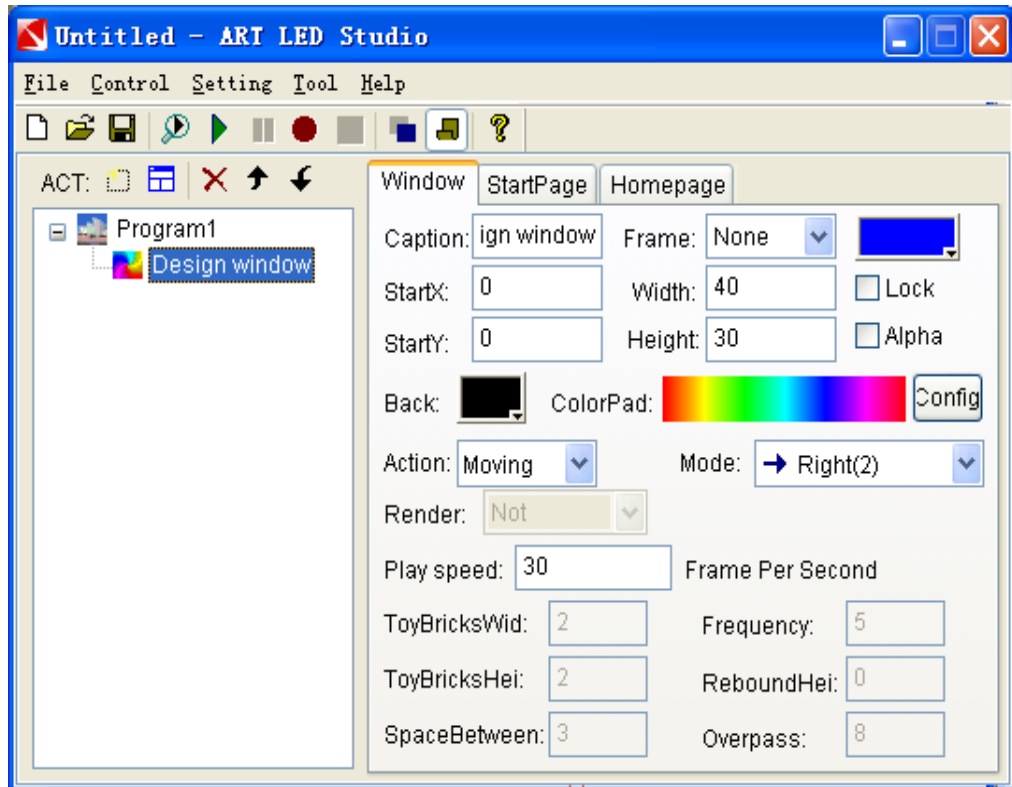
**Timer window:** as shown in Figure 2-17, you can set background color, picture, text, get to date and time, font, etc.



2-17


**Design window:** as Figure 2-18 shows, you can set background color, color pad.

There are 8 actions available; you can set parameters for each action to get different effects.







2-18

### 2.4.6. Step 6: Finish Programming

After the above five steps, a program page has been finished. Please do not forget to save your program page. Click the saving button  or select menu-->save.

### 2.4.7. Step 7: Play the program

Click  to start playing the current program files; click  to pause; click  to stop, or select from control menu. To play program files, click the button  to open. Please refer to chapter twelve about the detail.


## 3. Chapter Three: Text display

There are three methods to play text program: play in text window, open and play text file from file window, and imbed and play notification when playing program.



### 3.1. Display in text window

#### 3.1.1. Create new text window

Click New Window “”, as Figure 3-1 shows, select text window to create a new text window.

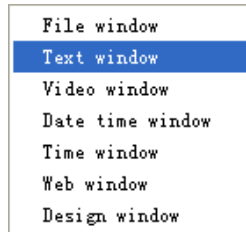


Figure 3-1

#### 3.1.2. Set text window

As Figure 3-2 shows, input text in edit box, then set the options: settle time, entrance time, exit time, play times, font, etc.

**Caption:** Name of text window.

**Frame:** Set the color and width of the frame.

**Start X:** Start position X in the display window.

**Start Y:** Start position Y in the display window.

**Width:** Set the width of the text window.

**Height:** Set the height of the text window.

**Lock:** Fix the widow.

**Background:** Set the background color or picture of the text window.

**Alpha:** Background is transparency, but the text is visible.

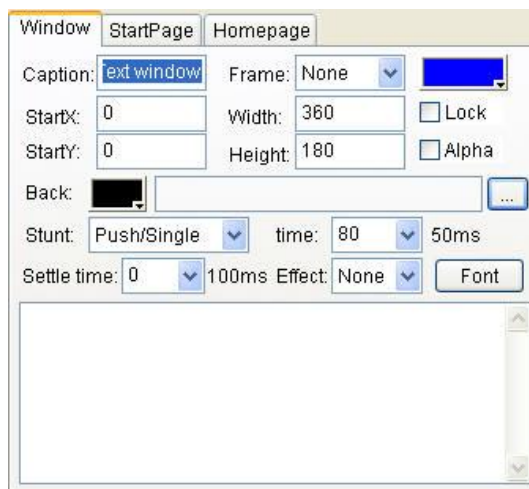


Figure 3-2

### 3.2. Open text file from file window.

#### 3.2.1. Create a new file window.


Click New window “

Figure 3-3

#### 3.2.2. Set the file window options.

Click file window in program options, as in Figure 3-4, pop up the property box. A file window contains kinds of files; you can add files to an existing file window.

Caption: The name of the file window.

Frame: Set the color and width of the frame.

Start X: Start position X in the display window.

Start Y: Start position Y in the display window.

Width: Set the width of the file window.

Height: Set the height of the file window.

Lock: Lock the window.

Background: Set the background color or picture of the file window.

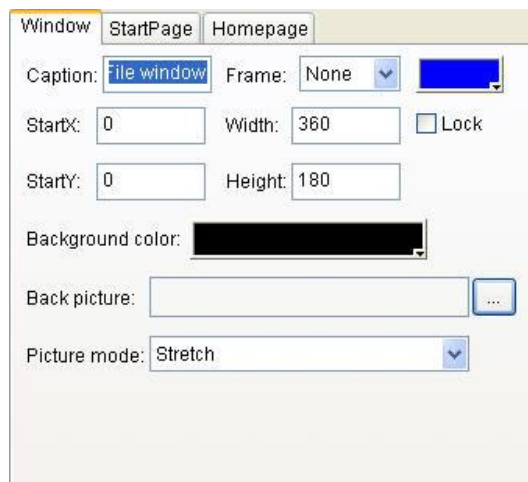


Figure 3-4

### 3.2.3. Set text file options.

Click the text file in file window, as Figure 3-5 shows, pop up the property box, you can modify the caption, file path, display mode, settle time, entrance time, exit time, play times, and font. More than 50 entrance and exit stunts are available. These settings are applied to the following text files.

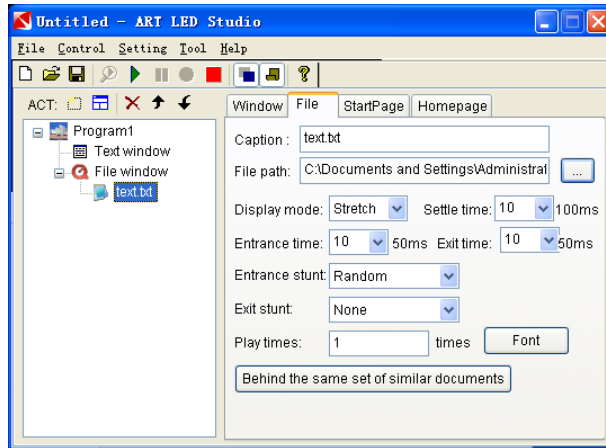



Figure 3-5

### 3.3. Score manager

Refer to chapter 11.

## 4. Chapter Four: Picture display

### 4.1. Create a new file window of picture

Click New window “”, as Figure 4-1 shows, click file window in the menu, select picture file in the pop-up dialog box and then click open, add the picture file in file window. Please refer to 3.2.2 chapter three.

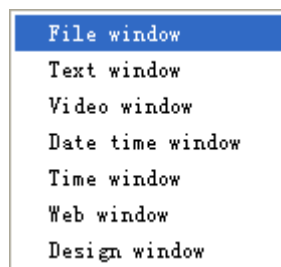


Figure 4-1

### 4.2. Set display options

Click the picture file in program options, the property box used to set the parameters of picture file appears on the right side as Figure 4-2 shows. You can modify the caption, file

path, display mode, settle time, entrance time, exit time, and play times. There are four kinds of display modes and dozens of entrance and exit stunts available.

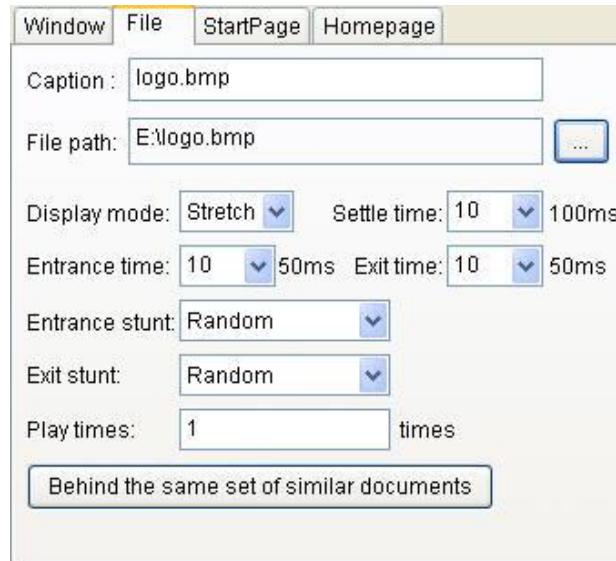



Figure 4-2

## 5. Chapter Five: Video animation display

### 5.1. Create a new animation program window

Click New window , as shown in Figure 5-1, select file window in menu, select video or animation file in the pop-up dialog box and then click open. If select file window in program options, software will automatically add the selected video or animation files to file window; otherwise create a new file window. Please refer to 3.2.2 chapter three about the setting of file window.

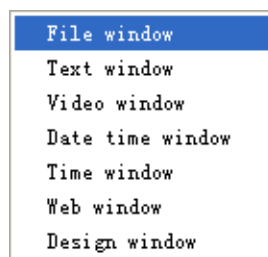


Figure 5-1

### 5.2. Set property of video and animation files


Click the opened video animation file in program options, pop up the video file property box on the right as Figure 5-2 shows. You can modify the caption, file path, settle time, play period and play times.



Figure 5-2

## 6. Chapter Six: Table and Slide display

### 6.1. Create a new file window

Click New window , as Figure 6-1 shows, select file window in the menu, then click “open” after selecting file you want to play in the pop-up file dialog box. If you select file window in the program options, the software will automatically add the file to file window; otherwise it will create a new file window. Details about the settings of file window are in 3.2.2 of chapter three.

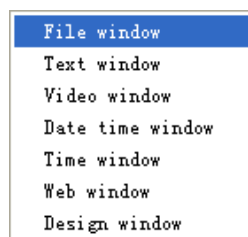


Figure 6-1

### 6.2. Set table file property

Click the table file in program options, the property dialog shown as Figure 6-2 will pop up on the right side, you can modify the caption, file path, settle time, entrance time, exit time, play times. More than dozens of entrance and exit stunts are available for choosing.

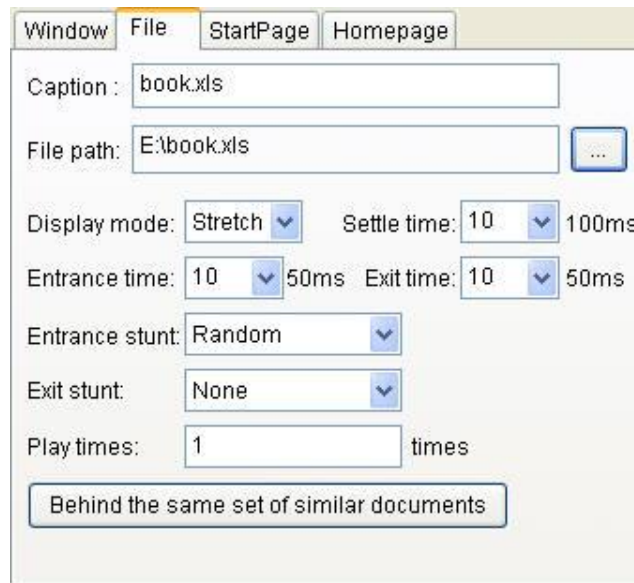


Figure 6-2

### 6.3. Set property of slide files

Click the opened slide file in program options, the property box as shown in Figure 6-3 appear on the right side. You can modify the title, file path, play time, slide switch interval. Also, you can select “Auto switch” and “Repeat play” options.

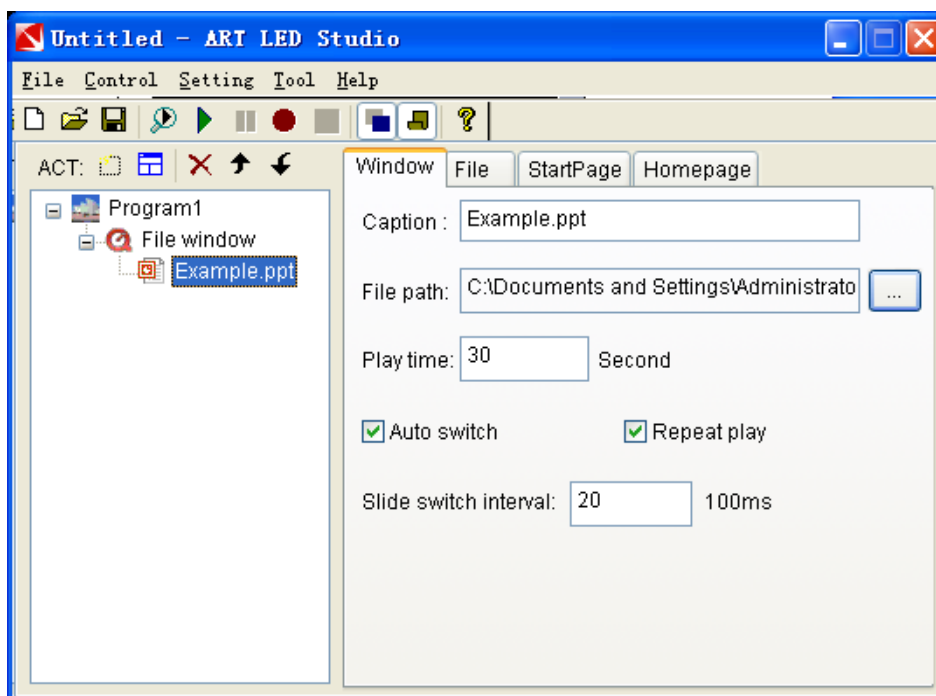



Figure 6-3

## 7. Chapter Seven: Date and time

### 7.1. Create new date time window

Click New Window “”, select “date time window” option as shown in Figure 7-1 to create a new date time window as Figure 7-2 shows.

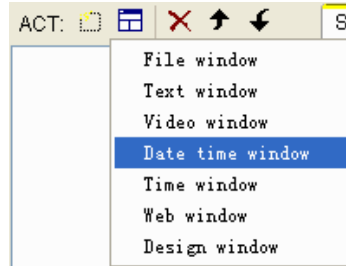


Figure 7-1

### 7.2. Set date time window

As Figure 7-2 shows, you can set the property of date time window.

Caption: Name of date time window.

Frame: Set the color and width of frame.

Start X: Start position X in display window.

Start Y: Start position Y in display window.

Width: Set the width of date time window.

Height: Set the height of date time window.

Lock: Fix the window.

Background: Select the background color and picture of date time window.

Alpha: Set the clock transparent.

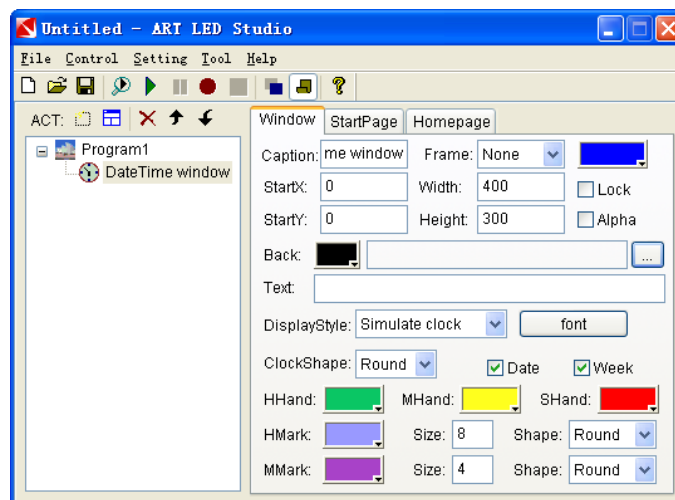


Figure 7-2

### 7.3. Set date and time

Two display styles, one is simulated clock, and the other is digital clock. Can select display style as shown in Figure 7-2.

- **Simulated clock**

Figure 7-3 displays the image and property box of simulated clock. You can modify the text, font, display style, clock shape, pointer color, size, date and day display.

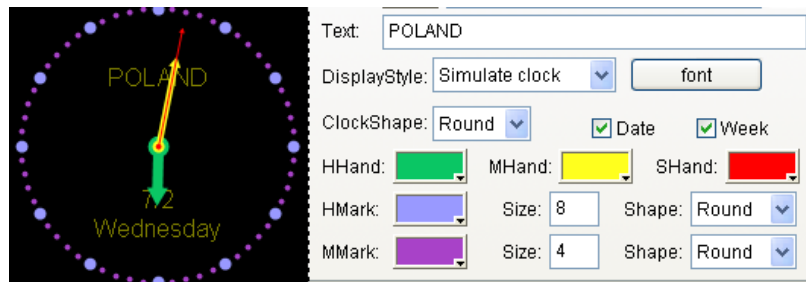


Figure 7-3

- **Digital clock**

The figure 7-4 displays the image and property box of digital clock. You can modify the display style, font, branch, and year and hour style.

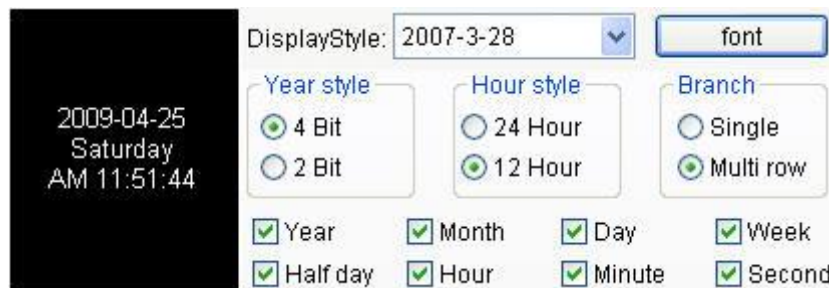



Figure 7-4

## 8. Chapter Eight: Timer display

### 8.1. Create new program window

Click New Window “”, as Figure 8-1 displays, choose time window to create a new timer window.

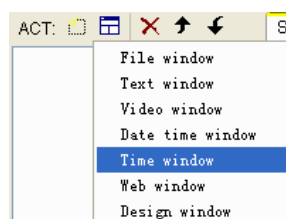


Figure 8-1



## 8.2. Set the timer window

As Figure 8-2, you can set the property of timer window.

Caption: Name of timer window.

Frame: Set the color and width of the frame.

Start X: Start position X in the display window.

Start Y: Start position Y in the display window.

Width: Set the width of the timer window.

Height: Set the height of the timer window.

Lock: Fix the window.

Background: Set the background color and picture.

Alpha: Set the window transparent.

You can set the text, font, get to date and time, etc.

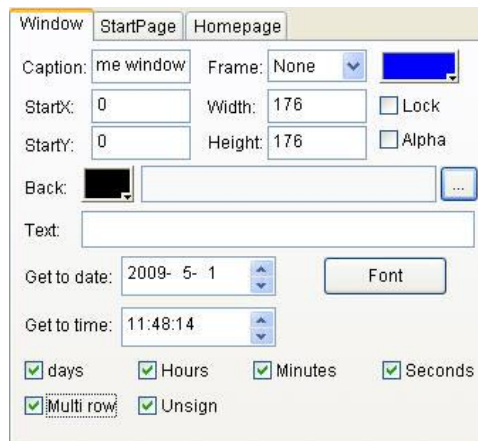



Figure 8-2

## 9. Chapter Nine: Video input and web display

Video window is used to display the signal from PC Camera and other video devices.

### 9.1. Create new video window

Click New Window “”, as in Figure 9-1, choose video window to create a new video window.

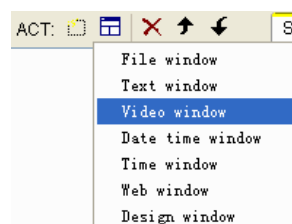



Figure 9-1

## 9.2. Create new web window

Click New Window “”, as in Figure 9-2, choose web window to create a new web window.

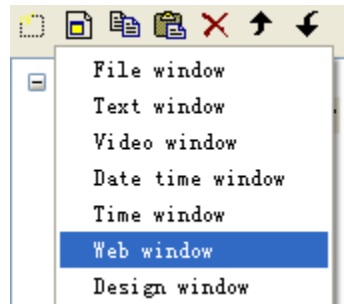


Figure 9-2

## 9.3. Set properties of web window

As shown in Figure 9-3, you can set the property of web window.

Caption: Name of web window.

Frame: Set the color and width of frame.

Start X: Start position X in display window.

Start Y: Start position Y in display window.

Width: Set the width of web window.

Height: Set the height of web window.

Lock: Fix the widow.

Website: After entering website, click “Modify” to confirm.

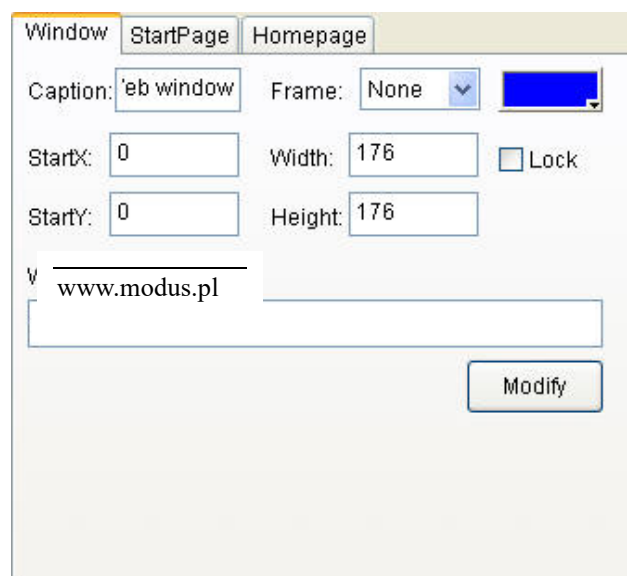



Figure 9-3

## 10. Chapter Ten: Design display

### 10.1. Create new design window

Click New Window “”, as in Figure 10-1, choose design window to create a new design window.

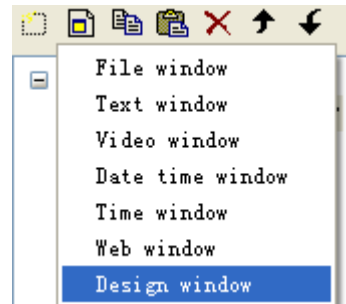


Figure 10-1

### 10.2. Set the design window options

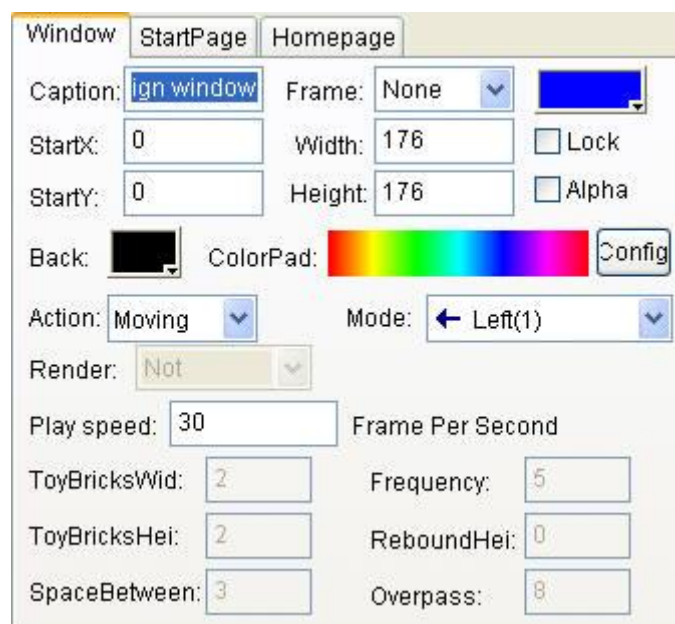


Figure 10-2

Caption: Name of design window.

Frame: Set the color and width of frame.

Start X: Start position X in display window.

Start Y: Start position Y in display window.

Width: Set the width of design window.

Height: Set the height of design window.

Alpha: Set the design window translucent.

Background: Set the background color of design window.

Color pad: Display the current used color.

Configuration: Configure the color pad.

### 10.3. Configure the color pad.

Click “configure”, pop up a dialog as Figure 10-3 shows.

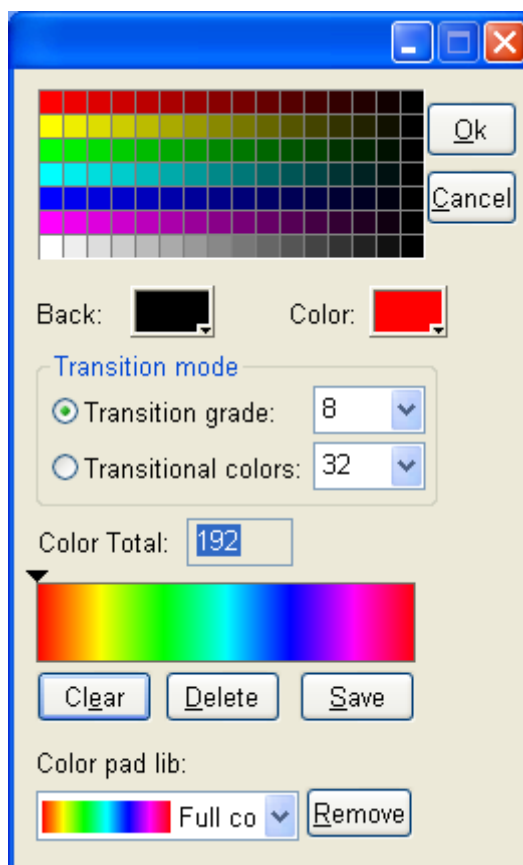


Figure 10-3

Background: Set background color, the default color is black.

Color: Set the current color.

Transition grade: The difference value of adjacent colors.

Transitional colors: The color number from current color transited to target color.

Total: The total number of color in palette

Clear: Delete all colors in palette.

Delete: Delete the last color in palette.

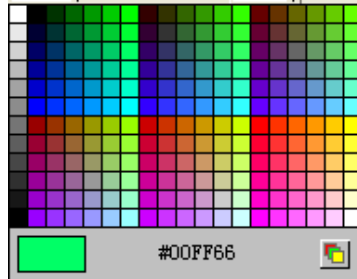
Save: Save the current palette to sample color list.

Color pad library: select configured color pad from library.

Remove: Delete the palette from color pad library.

### 10.3.1. Color buttons using method

Click color button, the color plate will pop up, mouse becomes a straw, the left bottom of color select box displays the color where the mouse is located in, and under the box displays the value of red, green and blue. Select and click the color. If the needed color is not in the plate, you can click the button on the right bottom of box to select color.



### 10.3.2. Set palette

**1. Click “clear” to delete all colors in palette.**

**2. Add one color:**

- ⊙ Click palette to add the current color to the palette.
- ⊙ Click “Color”, select color in the pop-up color plate. The selected color will cover current color and be added to palette.
- ⊙ Click on color grid, the selected color will be added to palette.

**3. Add transitional color**

- ⊙ Keep pressing “Ctrl”, click on palette, the last selected color will transit to the current color in specified color difference value.
- ⊙ keep pressing “Ctrl”, click “Color”, select color in the pop-up plate, the selected color will substitute the current color, and meanwhile, the last selected color will transit to the current color in specified color difference value.
- ⊙ Keep pressing “Ctrl”, click on plate grid, the last selected color will transit to the first selected color in specified color difference value.

**4. Add transitional color**

Drag mouse in color plate, the selected colors will be added to palette.

**5. Select from sample color library.**

Click sample color library, select the needed palette from the list.

## 10.4. Design board

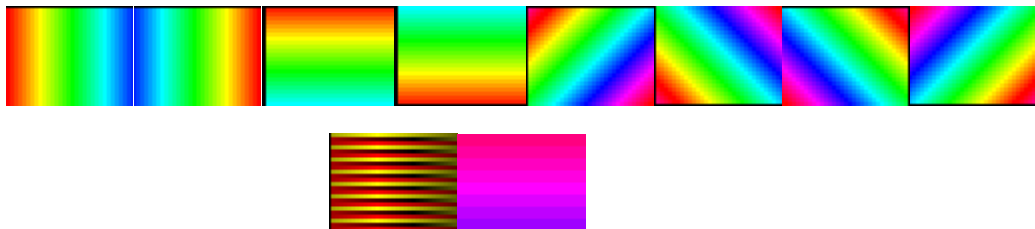
Eight actions in total: symmetry, interleaving, diffusing, rotation, gradual changing, dropping, toy bricks, sound wave. Each action includes lots of modes.

- Rendering mode: When the default color of current action is not from palette, this item is valid.
- Play speed: Play speed of design.

### 10.4.1. Movement

Moving action has ten modes.

- Left: move to left.
- Right: move to right
- Up: move up
- Down: move down
- Up left: move to up left
- Down left: move to down left
- Up right: move to top right
- Down right: move to down right
- Inner-port: move as route of pixels.
- Inter-port: color of all lights of each port is the same, the color moving among ports. This item ignores step length.

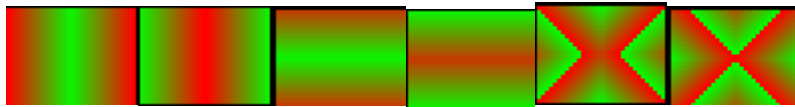


### 10.4.2. Symmetry

Symmetry has six styles.

- Horizontal open: color moves to the sides from center.
- Horizontal close: color moves to center from the sides.
- Vertical open: color moves to top and bottom from center.
- Vertical close: color moves to center from top and bottom.
- Twin corner open: color moves to two sides from center in the form of right angle.

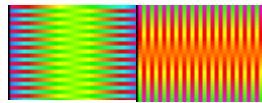
- Twin corner close: color moves to center from two sides in the form of right angle.



### 10.4.3. Interleaving

Interleaving has two modes:

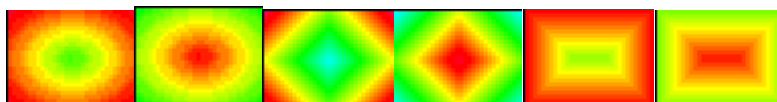
- Horizontal: the interlacing lines move from two sides to center.
- Vertical: the interlacing columns move to center from top and bottom.



### 10.4.4. Diffusing

Diffusion has six modes.

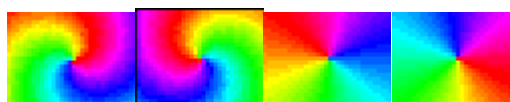
- Ellipse diffuse: color spreads around in elliptical shape.
- Ellipse shrink: color shrinks in elliptical shape.
- Rhombus diffuse: color spreads in rhombic shape.
- Rhombus shrink: color shrinks in rhombic shape.
- Rectangle diffuse: color spreads in rectangular shape.
- Rectangle shrink: color shrinks in rectangular shape.



### 10.4.5. Rotation

Rotation has four modes.

- Right-handed screw: color rotates in right-handed spiral shape.
- Left-handed screw: color rotates in left-handed spiral shape.
- Right circumrotate: color rotates clockwise.
- Left circumrotate: color rotates anticlockwise



### 10.4.6. Dropping

Dropping action has two modes. You can set the rendering mode.

- Style 1: Drop from upside, color changes in accordance with the color change in palette.
- Style 2: Unlike style 1, the dropping is white.



### 10.4.7. Toy bricks.

Toy bricks have 4 modes. You can set the rendering mode, width of bricks, height of bricks, space between, frequency, overpass, and rebound height.

- Bricks width: Width of bricks.
- Bricks height: Height of bricks.
- Space between: The ratio of the number of a row of grids to the grids number of bricks. 1 means no interspaces.
- Frequency: A row of bricks appear in certain frames. 0 means after a row of bricks are stacked, the next row of bricks come out.
- Filtration: The bricks coming out from the first certain frames will be filtered.
- Rebound height: Rebound height of bricks.

Left: bricks move left.

Right: bricks move right.

Up: bricks move up.

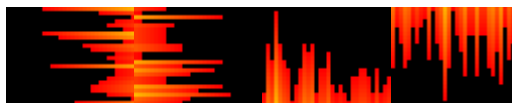
Down: bricks move down.



### 10.4.8. Sound Wave

Sound wave has 4 modes. You can set the rendering mode. Music note beats with color in palette.

- Left: music note bound left.
- Right: music note bound right.
- Up: music note bound up.
- Down: music note bound down.





## 11. Chapter Eleven: Score manager

Score manager is used to embed a temporary notice when playing program.

### 11.1. Open score manager window

Click menu “Control”, select “score manager” in drop-down menu, open a dialog box as follows.

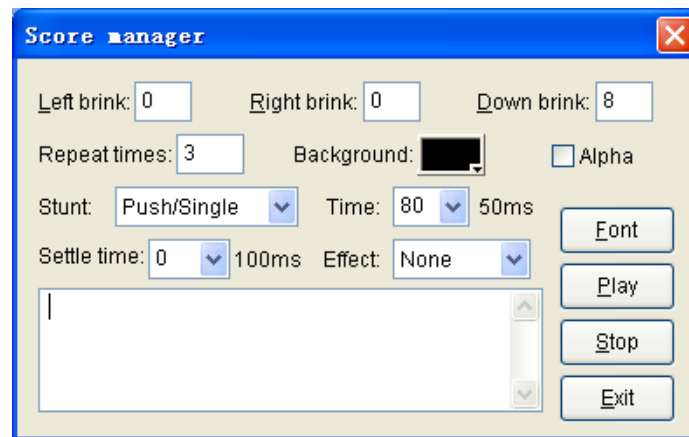


Figure 11-1

### 11.2. Set the window

As Figure 11-1 shows, you can set the repeat times, transparent, left brink, right brink, down brink, background, stunt, and font etc.

### 11.3. Play/stop the notice

After setting the options, click “Play” to play the notice, click “Stop” to stop.

## 12. Chapter Twelve: Studio Control

Studio control includes playing the Media player visual effect, previewing program window, playing program file, suspending, stopping, recording AVI file, opening saved files and switching program pages.


Click menu “Control”—“Expand or furl”, or click „Expand or furl” on toolbar to expand or furl the control window.

### 12.1. Media Player Visual Effect display

Click menu “Control”-“Media Player visual effect” to play the Media Player visual effect, click “stop” to stop.

**Note: the visual effect must be set in Windows Media Player.**

## 12.2. Program window preview


Choose program window or file from program options, then click menu “Control” — “Preview” or click “” on tool bar to preview. Click “stop” to stop.

## 12.3. Program Play


Play from first

Click menu “control”—“Play from first”


Play from the current program page.

Click menu “Control”—“Play”, or click “” on tool bar to play.



## 12.4. Pause

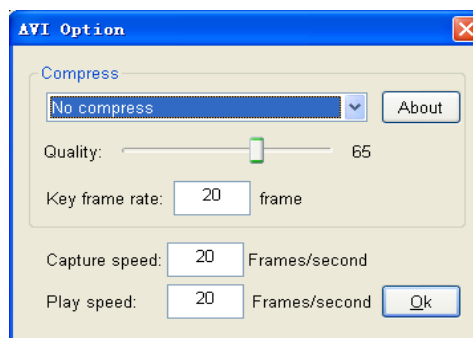
When playing program file, click menu “Control”—“Pause” or click “” on tool bar to suspend.

## 12.5. Stop

When playing or previewing the program or Media Player visual effect, click menu “Control”—“Stop” or click “” on tool bar to stop playing or recording file.


## 12.6. Record AVI file

Click menu “Control”—“Record” or click “” on tool bar to start recording file. Click “” to stop recording, pop up the AVI file save dialog box, select the save file path, enter the file name and click “save” to save. Before recording, the AVI file parameters can be set, Click menu “Setting”—“REC AVI options”, and pop up a dialog box as follows:



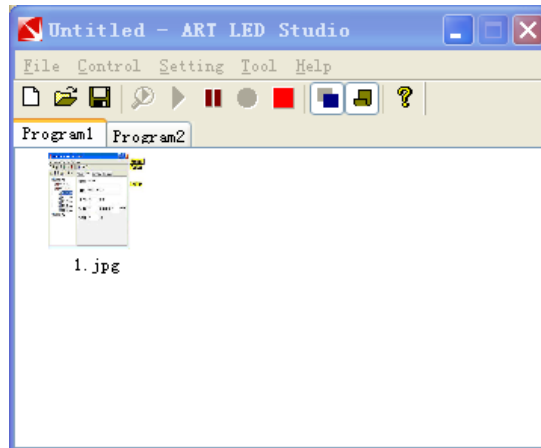
You can set the image quality, key frame rate, compression encoder, capture speed and play speed.

### 12.7. Open saved file

When playing a program, click menu “File”—“Open” or click “” on tool bar, select the multi-media file and click “open” in the pop-up dialog box, then begin to play.

### 12.8. Switch program

When playing a program, the interface is as follows.

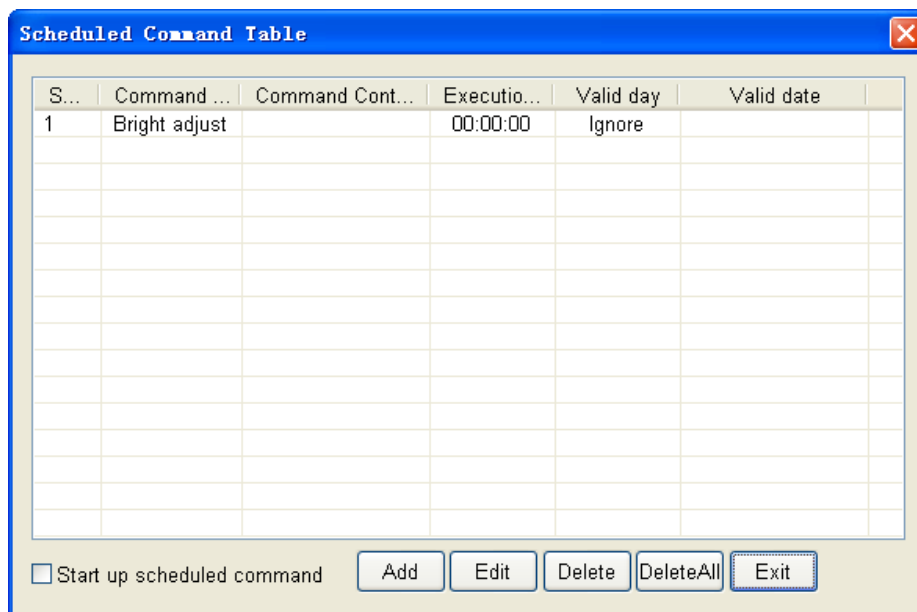


When playing a program, select an icon in the icon list, the window will play the corresponding file. Note: there is no respond when you click a selected icon.

When playing a program, if you click another program, software will switch to play the selected file.

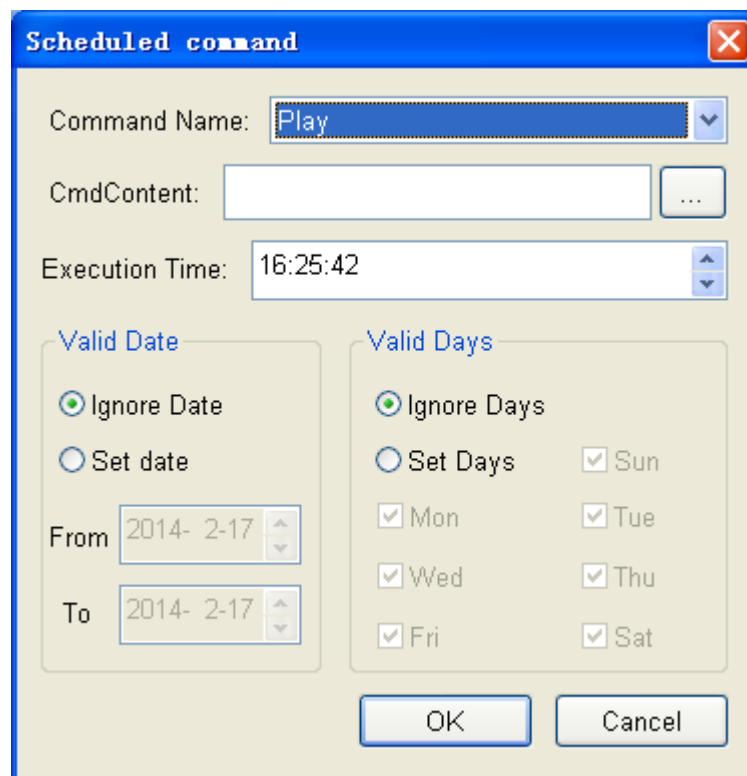
### 12.9. Timing Task

Click menu “setting”—“Schedule Table”, pop up the “Scheduled Command Table” dialog box.



Startup scheduled command: only this option is selected can the software upload the timing command when starting up, and then restart the software.

- Add: add timing command
- Edit: amend the selected timing command
- Delete: delete the selected timing command
- Delete all: delete all timing commands
- Exit: exit the command table
- Click “add” or “edit”, pop up the following “scheduled command” dialog box.



- Command Name: play, pause, stop, turn off LED power.
- Command Content: valid when the command is “play program file”, meaning the program path.
- Execution time: instruction executed time
- Effective date: instruction executed within a certain date range, or none
- Effective week: instruction executed on a certain day, or none

### **13.Chapter Thirteen: Software and hardware setting**

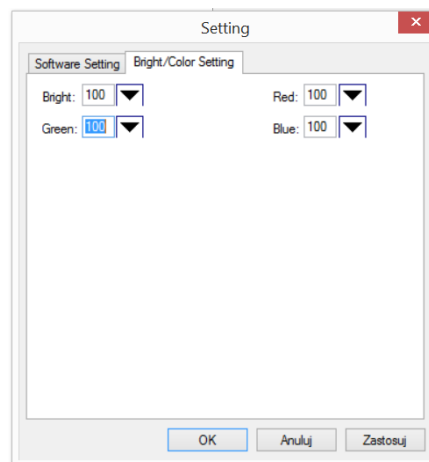
Click menu “setting”—“System setting”, open the system setting property dialog box.

### 13.1. Software setting

1. Hardware interface: Select correctly according to the controller interface.
2. Play window: Input the figure to set the position and size of window, and then click “OK” to confirm.
3. Screen off: LED screen excursion relative to the top left corner of the play window.
4. Auto check new edition of software: Check new edition software when running the software and remind if download or not.
5. Play speed: Set the frame number in per second.
6. Hardware accelerate: High, middle, low. When it is low, the transparent window cannot be shown on screen, so normally choose high or middle.
7. Video output: include Default, VMR7, and VMR9. VMR9 is most efficient, but require high performance of graphic card. When selecting high in hardware accelerate, choose default in video output.

After amending the hardware interface or hardware accelerate, restart the software.

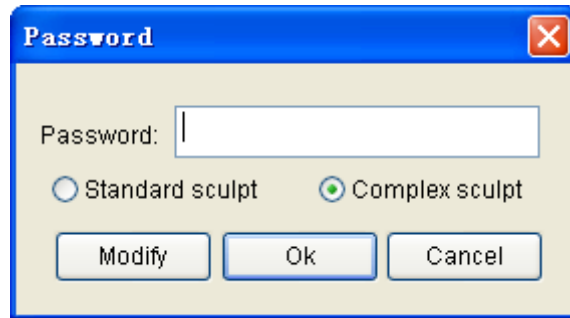
### 13.2. Brightness/color setting



In the first column, keep pressing “Ctrl” and drag mouse to select slave controller needed to be reset, or click the check box on the top to select all controllers. Then you can set the brightness and color, and then click “OK” to confirm.

## 14. Chapter Fourteen: LED Project Sculpt

Click menu “setting”—“Setting sculpt”, select “complex sculpt”, the default password is empty.





Standard sculpt refers to standard screen, complex sculpt refers to arbitrary connection of LED lamp.

Enter the sculpt interface. You can set the light type, IC type, brightness and so on in slave setting; set connection mode, module, and line limit pixels in the left. The software can guide you to make the route.

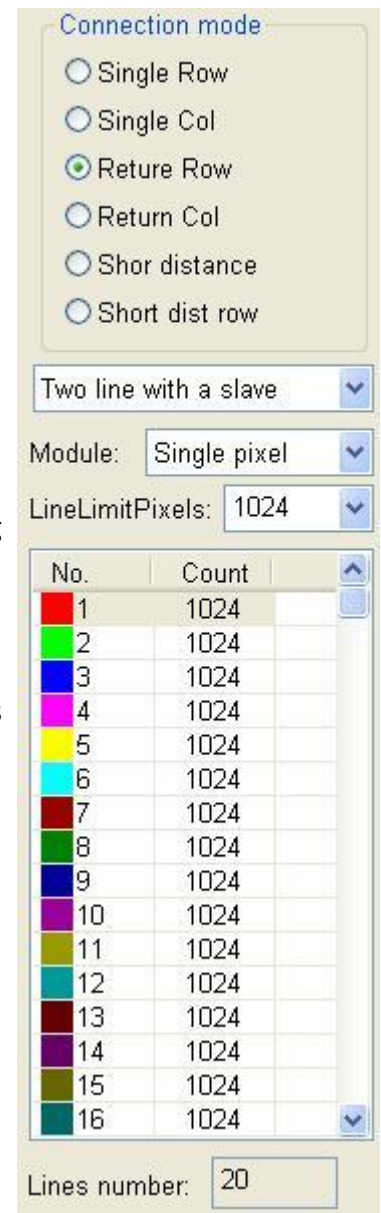
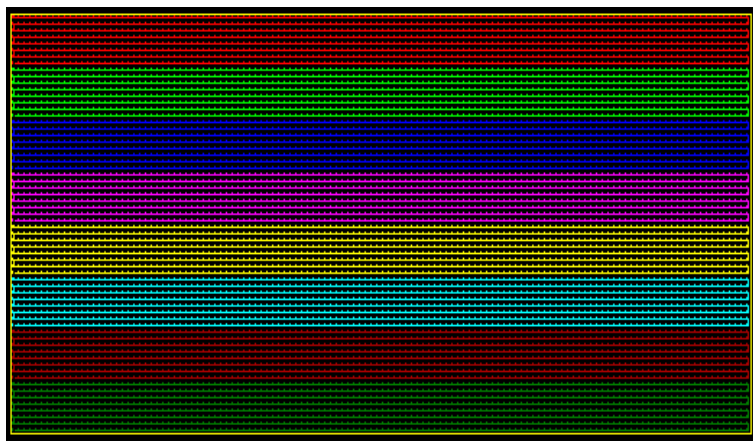
### 14.1. Light sculpt interface

#### 14.1.1. Connection mode

- Single Row: line connected like “z” row by row
- Signal Col: line connected like “z” column by column
- Return Row: line connected like “” in row
- Return Col: line connected like “” in column
- Shortest distance: connect the nearest dot.
- Shortest distance row: connect the nearest dot, considering the regularity of a row

#### 14.1.2. Controller ports

Drag the mouse in working area and several lines are added as follows:



When the pixel number of a port is above the limit pixels number, the exceeded pixels will be added to next route. The pixels number of a route (port) displays in the left count list (as the right image shows).

### 14.1.3. Module

Signal pixel

### 14.1.4. Line limit pixels

When adding pixels to a route, if the pixel number is above the limit number, then the exceeded pixels will be added to next port.

### 14.1.5. Confirm line number of a slave controller

A port is a line. Choose a few lines to share a slave controller on the need of a few ports. For example, we need three ports, then select "three lines of one slave controller" in the software. If select "two lines with a slave", then line1 and 2 are the first slave controller, route 3 and 4 are the second controller, route 5 and 6 are the third slave controller.

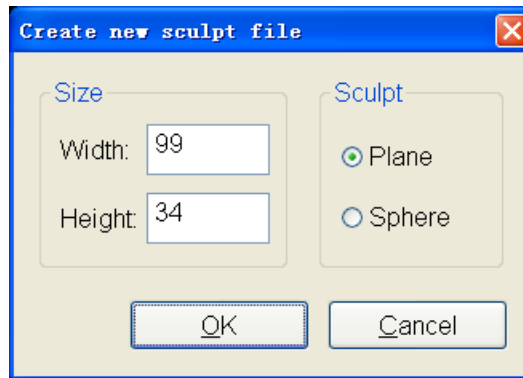
## 14.2. Lighting Sculpt Menu

Menu bar have five main menus in total: "file (F)", "Edit (E)", "View (V)", "Setting(S)", "Help (H)"

### 14.2.1. File menu

<u>N</u> ew	Ctrl+N
<u>O</u> pen...	Ctrl+O
<u>S</u> ave	Ctrl+S
Save <u>A</u> s...	
Output image	Shift+O
Export display module	
Import display module	
Delete current display module	
<u>P</u> rint...	
Print <u>p</u> review	
Print <u>s</u> etup...	
Return	


- New :( Ctrl+N): create one blank sculpt file. After clicking, pop up a "create a new sculpt file" dialog box. The size unit is pixel. Fill in correct pixel number as project requires on horizon and vertical direction. If the project sculpt is a sphere, please select sphere from sculpt group. Otherwise, select plane. Then click "OK".








- Open (Ctrl+O): open a sculpt file. Expanded-name of sculpt file is \*.scu
- Save (Ctrl+S): save the editing sculpt file. At same time create a controller configure file, \*.cfg.
- Save as: save the editing sculpt file as another file name.
- Output image: Output the editing sculpt drawing as Figure file.
- Export display module: output the display module in software as file.
- Import display module: import the display module into software.

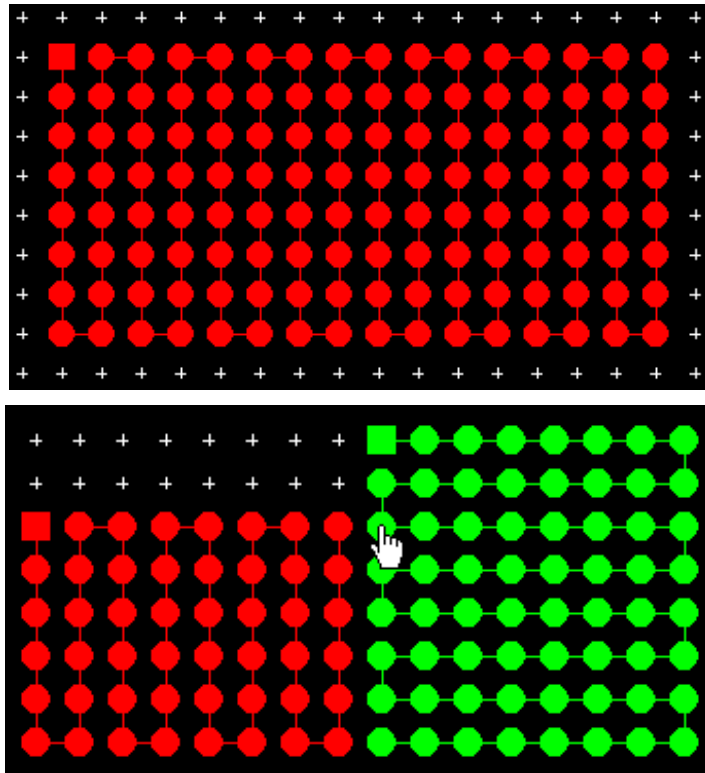
**14.2.2. Edit menu:**

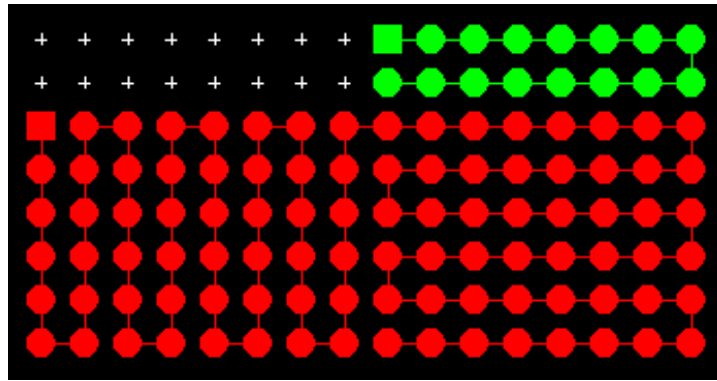
U <u>ndo</u>	Ctrl+Z
Re <u>do</u>	Ctrl+Y
<hr/>	
C <u>ut</u>	Ctrl+X
C <u>opy</u>	Ctrl+C
P <u>aste</u>	Ctrl+V
D <u>elete</u>	Delete
T <u>ransfer</u>	G
R <u>everse</u>	A
• <u>A</u> dd	D
A <u>rray copy</u>	Shift+C
S <u>ave as module</u>	M
P <u>ixels repeat</u>	R
P <u>oint adjust</u>	

- Undo: undo the previous operation
- Redo: redo the previous operation
- Cut: enter cutting status, the mouse pointer becomes , then cut the demand pixels in working area. The software will ask whether delete the pixels within the area, after clicking “Confirm”, all the pixels within the area will be deleted. However the system clipboard saved a copy which allow to paste by paste command for times.

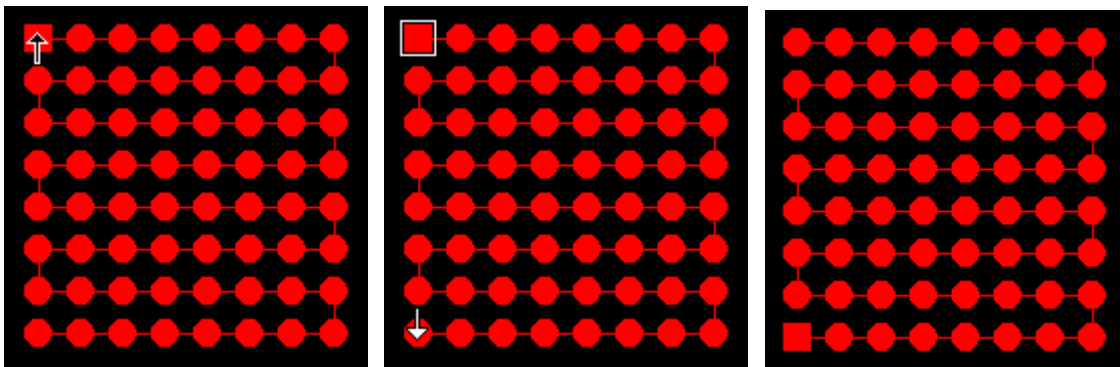


- Copy: enter copy status, the mouse pointer becomes  , then copy the demand pixels in the working area. The selected pixels will be copy to the system clipboard. This command is different with “cut”; it will not delete selected pixels.
- Paste: enter paste status, mouse pointer becomes  . Once there are data in clipboard, this command will be activated. The Figure in clipboard will be moved following mouse. Click mouse, the pixels in clipboard will be pasted to the position. When copy numbers of ports’ pixels, then all the pixels in clipboard will be connected to the ports.
- Delete: enter delete status, mouse pointer becomes  , drag the mouse and select the pixels to delete, and then click “Confirm” on the pop-up dialog box to finish deletion
- Transfer: enter transfer status, mouse become a hand shape  . Transfer the selected pixel and the following pixels to the end of the current route. As the following image shows, the red line is the first port, green line is the second port, select the first port and set it as the current port, then click  , click on the square green dot, the second line will be connected to first line.





Reverse: enter reverse status, mouse pointer becomes an up arrow. Click one end of the route, the mouse pointer becomes a down arrow, then click the other end, the route will be reversed, meaning the pixels sequence of the route are reversed.



Add: enter adding route status. The mouse pointer becomes a crossing pointer. By clicking right mouse in working area, can also enter adding route status. When the mouse moving on the grid, the status bar will indicate the mouse position in grid, X indicates column, Y indicates row. There are two methods to add route as below:

(1) Rectangle selection:

It is suitable to regularly route within a rectangle; the rectangle size is not limited. **Firstly**, choose connecting priority from the light sculpt interface. Choose “Row priority” to route in row within the rectangle area, or choose “Column priority” to route in line within the rectangle area.


**Secondly**, select connection method. Choose “Single direction” when route in one direction, otherwise choose “Return”. “Shortest distance” means connecting to the nearest grid point. This method is effective when route in landscape and the display module is single pixel. Users can define which kind of module will be added in the route, the default module is single pixel, meaning adding pixel by pixel. If define and select a 32×32 module, the module will be added as a unit. Click “edit”—“saved as display module” to define module.

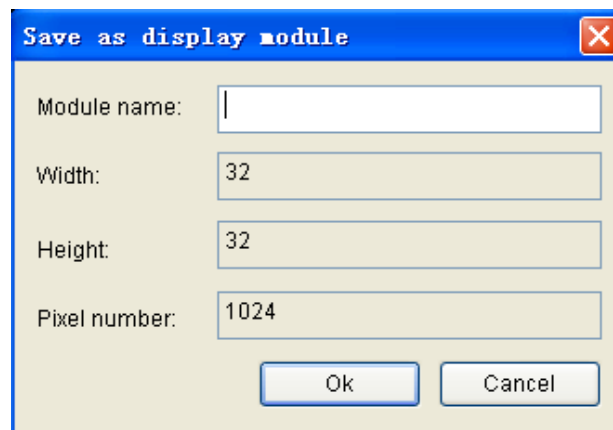
Set the pixel number of each port, the pixel number of each port mustn't be above the set pixel number, the surplus pixels will be added to next port automatically. Rectangle selection methods: Drag mouse to the beginning position of demand pixels, keep pressing left mouse button, and drag mouse in the working area, there will be a frame, and the status bar indicates the width and height, release mouse until selecting all demand pixels.

When the demand area is larger than monitor, can use direction key to help. The four direction keys indicate four different directions. Meanwhile, press "+" or "-" to zoom in or out. Press "ctrl" when releasing mouse, a dialog box will pop up, prompt for width and height, it is convenient to use this method when the demand area is larger than two rows and two columns.

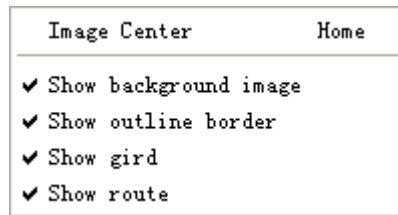
(2)Right click:

right click on the grid dots that are not added yet, the dots from last dot of the current port to the right click dot will be added to the current route,

- Array copy: Enter the array copy status, the mouse will become , set the route priority and connection mode in lighting sculpt interface, then drag the mouse to rectangle the demand pixels in working area. Release mouse, pop up a dialog box, prompt for the array unit number, and then click OK. Array will be pasted according to priority, connection mode and mouse drag mode, port number will increment automatically. Note: the selected pixels number is maximum 2048.
- Saved as module: Save the defined route as a display module, a display module can't contain routes of multiple slave controllers.



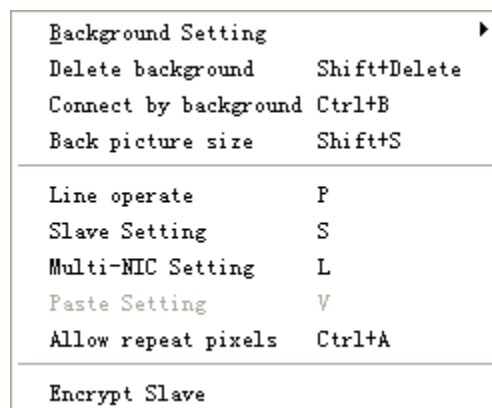
### 14.2.3. View menu:



- Image center: to display the Figure in center.
- Show background: show or hide the background.
- Show outline border: show or hide the outline border.
- Show grid: show or hide the grid
- Show route: show or hide route

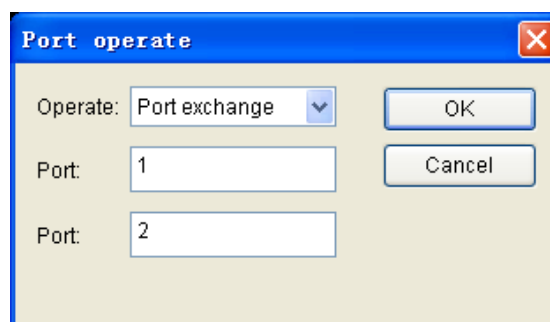
Furthermore, press '+' to zoom in Figure, press '-' to zoom out Figure.

### 14.2.4. Setting menu

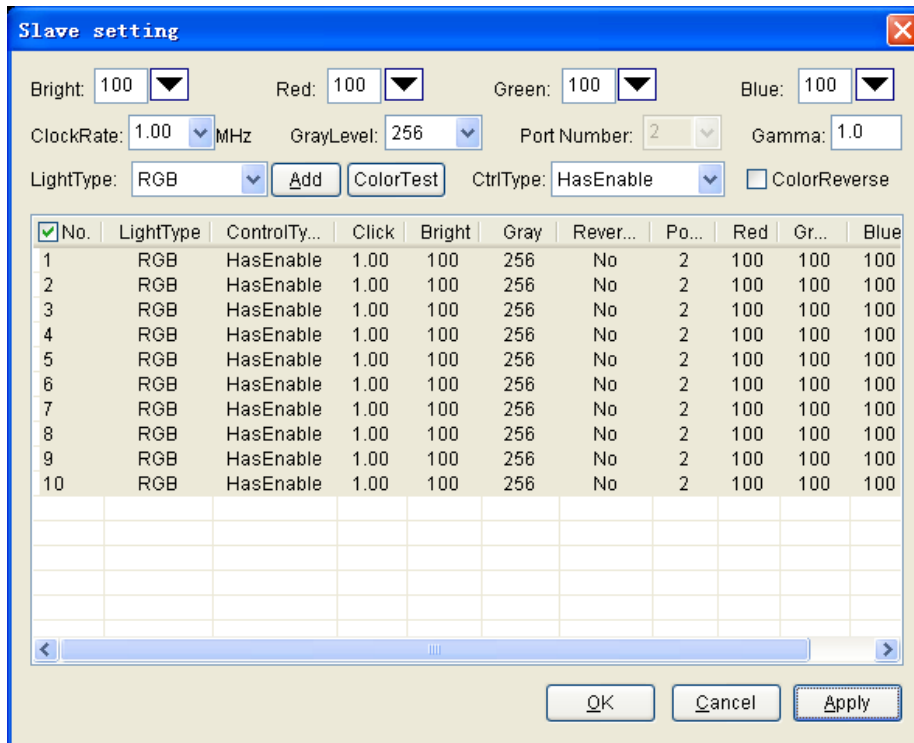


- Background Setting: Click the item, brush tool will inlay the window. Click menu "check" – "zoom out" – "display grid". Then grid will display on canvas, which is convenient to draw. Use the brush tool to design the shape of route. Click "save", apply the designed shape to the background of sculpt. After setting background figure, connect the dots according to the background figure. Click menu "connect route by background". The grids without background figure cannot add pixels.
  - Paste from the clipboard: paste text or Figure to working area as background.
  - Lead in from file: Lead in Figure file as background, pop up and open file dialog box, select one Figure file as background.

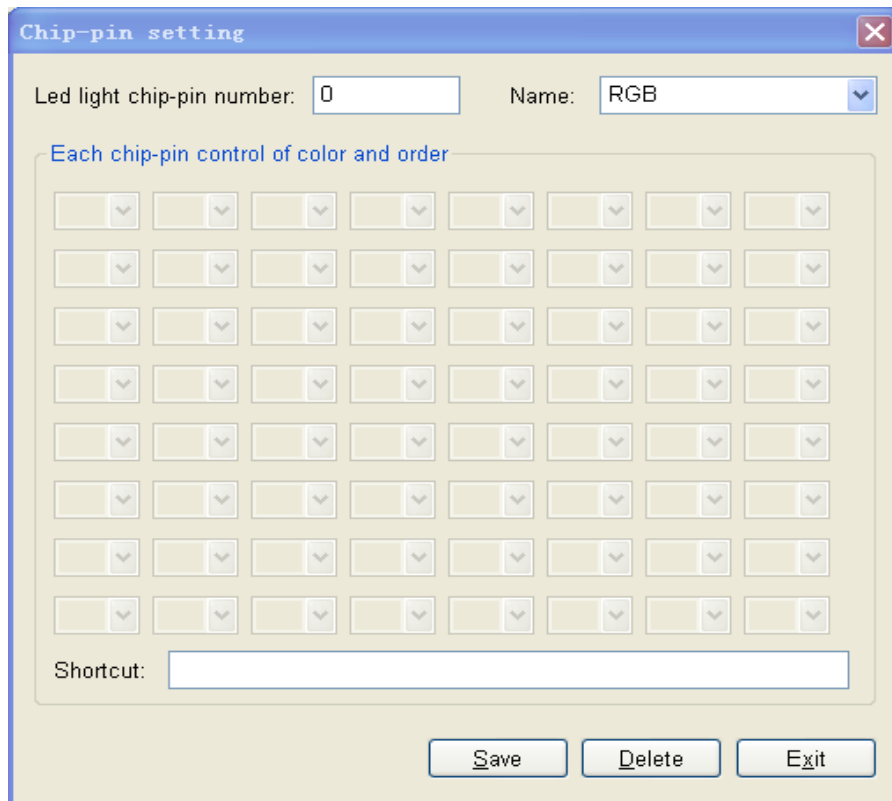
- Picture identify: can automatically identify the image with only circles or dots, it is better that the contrast of image is high. The red circles mean the identified circles or dots.
- Lead in dxf file: lead in dxf file from AutoCAD, require pixels showed by circle or regular polygon. Connect pixels with straight line, the pixels touched by straight line are connected.
- Delete background: delete the background Figure.
- Connect by background: For the complex graphics, select “connect by background” to help. Only the pixels on the background image can be connected.
- Background picture size: adjust the size and position of background picture to align the content of picture with grid.
- Port operate: easy to realize pixel exchange of two ports, convenient to unite and delete all pixels of one port.



- Slave setting: click “slave setting”, pop up the “slave setting” dialog box, the colors of first three pixels of each slave controller are red, green and blue. Select the port, then modify the parameter options, finally click “confirm”.
  - Bright: Adjust the brightness.
  - Color: Adjust red, green, and blue.
  - Clock rate: Select the suitable clock speed; modify this parameter when LED lamp is blinking.
  - Gray level: Set grayscale level of LED lamp.
  - Color test: Test the order of RGB color components
  - Light type: Set the driver IC pins order.
  - Control type: Set the driver IC type, the IC type could be different among the slave controllers
  - Color reverse: Reverse the color.



The default Light Type is RGB, if the sequence of output pin is different from RGB, need to amend light type. Click “Add” when the lamp is not among the light type, pop up the chip-pin setting dialog box.



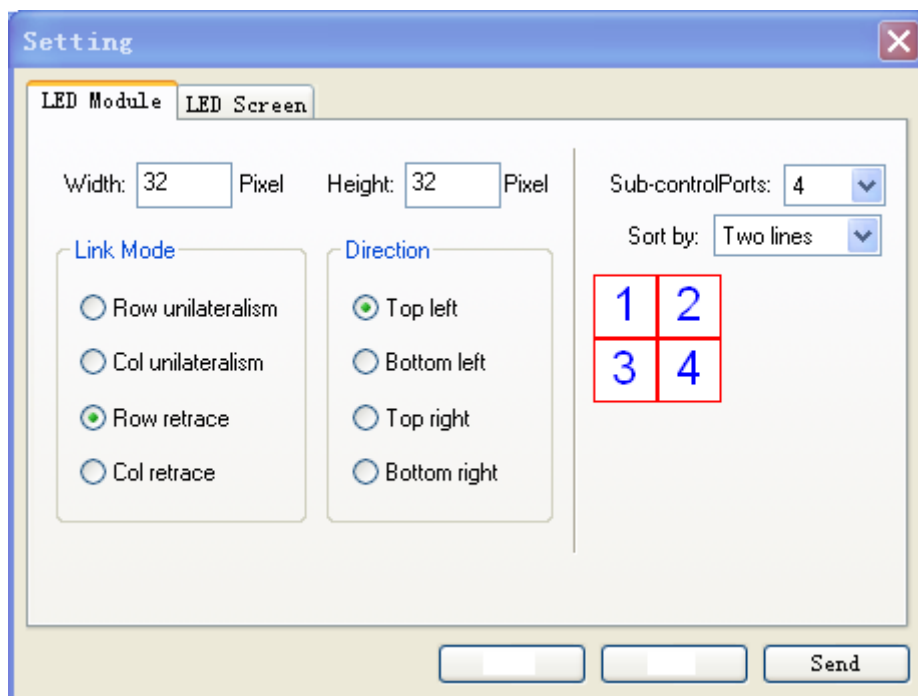
LED light chip-pin number refers to the color cycle number. For example, a lamp tube use two 8-bit output chips, and the routes of these two chips are different, then the bits number are 16; if the routes of two chips are same, then the chip-pin number is 8. G1B1R1G2B2R2G3B3R3 is 3-bits circulation, so the chip-pin number is 3.

After setting the chip-pin number, set the color controlled by each chip-pin and the order, or input with shortcut key(R, G, B) means color, the following number means sequence number, the space means vacancy.

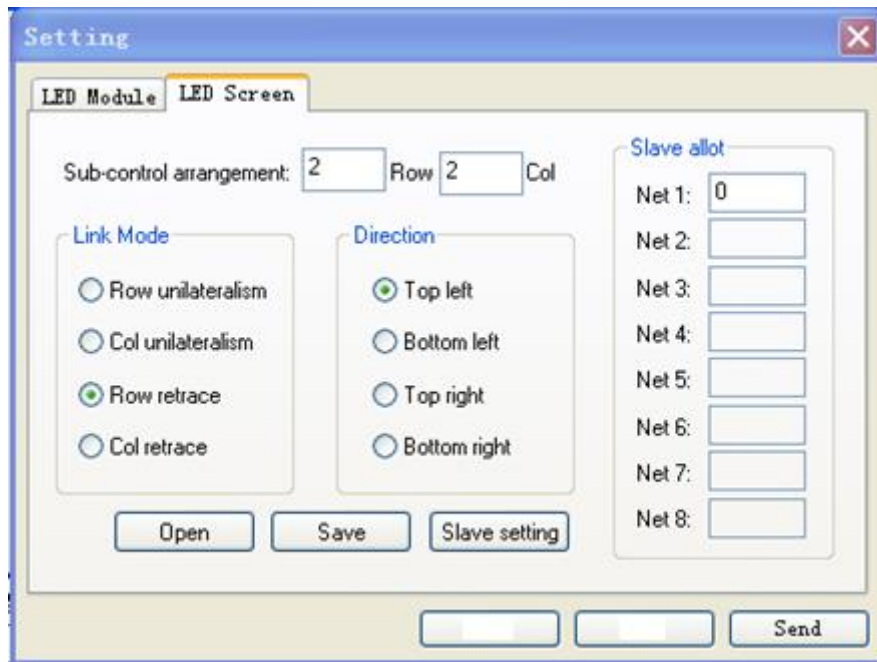
### 14.3. Standard Sculpt

Standard sculpt setting includes LED module setting, LED screen setting and slave controller parameter setting.

LED module setting is to see the lamps controlled by a port of a slave controller as a module, need to set the width, height, link mode and direction; set the slave controller ports and sort method, show as follows.



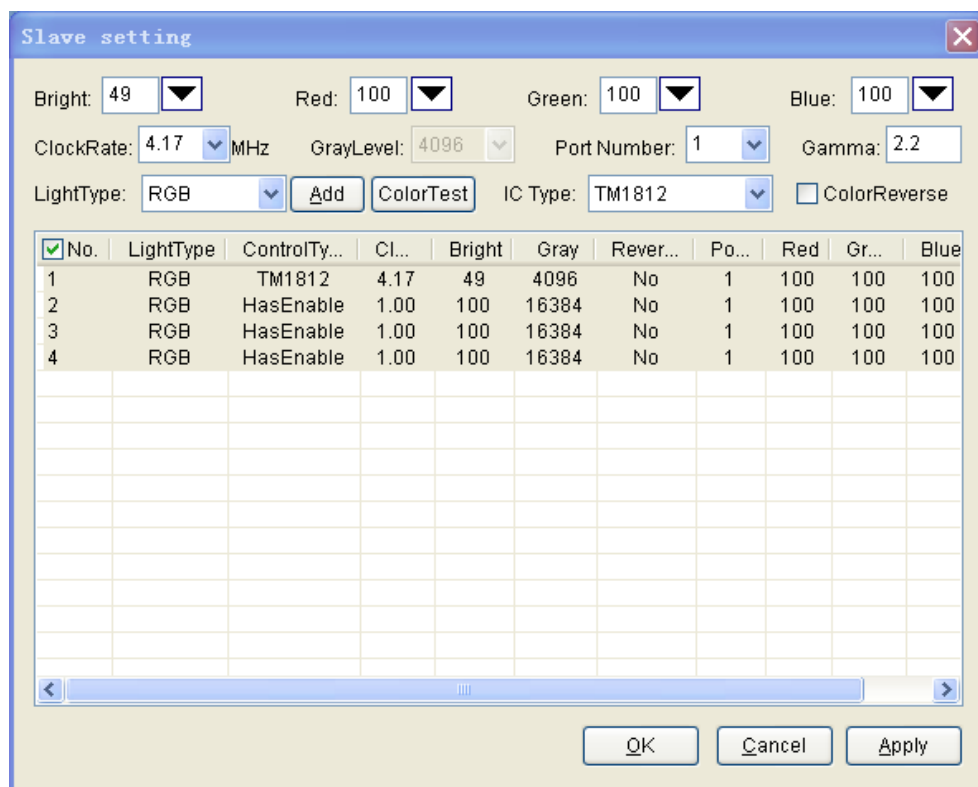
In LED screen settings, need to set the slave controller number, arrangement mode, and link mode and input route direction. If there is only one network card, all slave controllers will be connected to this card. If there are many network cards, need to distribute slave controller. Place the mouse over edit box, the IP address of each slave controller will show up. Show as follows:



Click “slave setting” to set the slave controller parameters, can modify brightness, clock frequency, grayscale level, port number, Gamma, light type, IC type and so on, and then click “Apply”.

Click “save” to save standard sculpt setting as “scu” file.

Click “open” to open and use the previous saved “scu” file.





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## 15. Chapter Fifteen: Attention

### Hardware Accelerate

Open display property dialog box, click “Advanced”, select “trouble shooting” in the pop-up dialog box, hardware accelerate slider has six levels, the six levels has the best effect, but has a high requirement of computer, so level4 or level 5 are recommended.

In software settings, there is also a hardware accelerate option, which refers to the hardware accelerate function of this software.

## 16. Chapter Sixteen: Illumine Lamp Quickly

1. Connect lamp to slave controller, controller to computer network card. One computer could has many network cards, each network card can connect maximum 255 slave controllers.
2. Set IP address and subnet mask. Double-click “network connection” in control panel. Right-click “local area connection” and click “property” in the pop-up menu. Double-click “Internet Protocol (TCP/IP), select “use the following IP address”, specify an IP address. Subnet mask is fixed at 255.255.255.0. If you have more than one network card, the first three bytes of IP address cannot be the same, the value of last byte ranges from 1 to 254, don't set other items. After electrifying slave controller, the status of network card is “connected”. Finally, click “OK”.
3. Start “ART LED studio software”
4. Click menu “setting”—“sculpt setting” to enter sculpt setting. Drag mouse in working area, there will be some pixels added to slave controller.
5. Click menu “setting”—“slave setting”. Choose control type correctly according to the driver chip of lamp, and choose proper clock frequency, then click “Apply”.