

# LT-5300 SD Card Controller

## Manual



July, 2008

# Index

1. Brief Introduction.....	1
2. Features.....	1
3. Specification.....	2
4. Connecting method.....	2
5. How to operate the controller.....	3
5. 1 How to make and save the display content.....	4
5. 2 How to start the controller.....	4
5. 3 How to set up the controller.....	4
Appendix: Convert & save effect file.....	5
I . Brief introduction: .....	5
II . Instructions .....	5
A. Import the configuration DAT file.....	5
B. Convert & save .....	7

## 1. Brief Introduction

This controller is mainly for controlling the LED digital tubes or LED pixel screen that used for indoor/outdoor decoration of buildings, stages, clubs and so on. Customers can make their expected effect, and then save it into the SD card. Via the controller, the effect can be displayed on the tubes or the pixel screen. This system can be debugged by the PC, users can edit the effect very conveniently to fulfill the RGB color changes, graphics, animations or even video effects.

## 2. Features

1. Adopted the cutting-edge technology to overcome the previous disadvantage of complicated connection methods, easy to produce, install and maintain.
2. The master controller and the slave controller accept the RS-485 protocol, which means the transmission distance can be more than 200m, and can further the distance by RS485 relay.
3. The slave controller can identify the serial code automatically, no need to use DIP switch, which is a new advantage.
4. Can debug and get your desired effects by means of WYSWYG after connecting with the LT-5100 control system to the tubes and PC.
5. Can use special software to debug the irregular screen.
6. 128 levels of grey scale; mix up to 2097152 true colors.
7. 32 speed levels, can debug the recorded file effect.
8. Each controller can save 32 effect files, after the controller is turned off, the system can automatically memorize the file and the speed you displayed.
9. The slave controller will clear the record automatically after the master controller turned off.

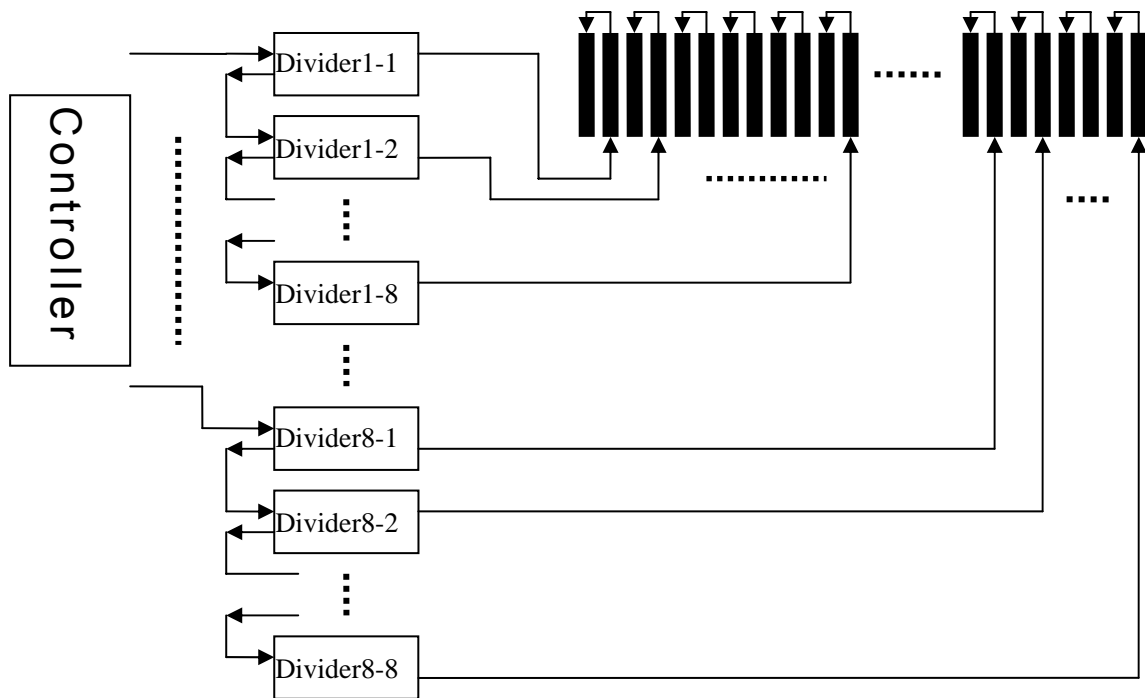
10. The system can record files in any formats.
11. Good ability of anti-interference; auto-renew function upon malfunction.

## 10. Specification

1. Each controller has 8 outlets at most, each outlet can connect 8 dividers at most, each divider can control 512 pixels, total 32,768 pixels at most
2. Signal output:
  - The master controller to the divider: RS-485 protocol;
  - The divider between divider: RS-485 protocol;
  - The slave controller to the tube/pixel screen: SPI(TTL);
3. Gray scale: 128 levels per R, G, B at most;
4. Input power: 12V DC 1000mA
5. Maximum power: master controller: 10W; slave controller: 2W;
6. Working environment:  $-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$

## 11. Connecting method

The controller connects to the tube/pixel screen through the dividers, as picture 1.



Picture 1: controller and tube/pixel screen

**Instructions:**

1. Each controller's outlet can connect to 8 dividers at most, by twisted-pair cable, the transmission distance can be more than 200m, and still can be furthered by RS-485 signal relay.
2. The distance between the divider to the tube/pixel screen can't be further than 20m.
3. Each divider can control 512 pixels at most, for example: the tube light with 16 pixels per meter, you can connect 32 meters per divider.
4. The tubes in each channel connect in series.

## 12. How to operate the controller

The steps are as follows:

Copy the converted file into the SD card→ install the SD card into the controller→ power on, choose the file you want to display and setup the speed→ play

## **5. 1 How to make and save the display content**

To make and save the display content must be done through LT-5100 software, the details please refer to 《Appendix: Convert & save effect file》

## **5. 2 How to start the controller**

1. Install the converted SD card into the controller.
2. Connect the controller, divider and the digital tube as the picture 4 shows.
3. Power on, the controller will display the effect file automatically.

## **5. 3 How to set up the controller**

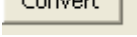
There are 4 buttons on the controller for setup.

Two for choice of the displaying files, + is forward, - is backward. The controller can store totally 32 files.

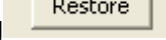
The other two for adjusting the speed, + is up, - is down, you can adjust it according to your needs.

# Appendix: Convert & save effect file

## I. Brief introduction:

The effect files in the SD card of LT-5300 are made through the  function built-in LT-5100 software (**Note: Only when you connect it with LT-5100 then the software can work**)

The configuration of LT-5100 software is subject to different layouts and quantities of digital tubes you installed, in order to make it easy to use, we will configure it perfectly before delivery as per customer's conjunction method and save it as a

DAT file, customer just need to import this DAT file by clicking , each DAT file is for a specific conjunction diagram.

## II. Instructions

### A. Import the configuration DAT file

1. LT-5100 software is green, no need to install, just double click it then you can use it.



Figure 1. Choose language

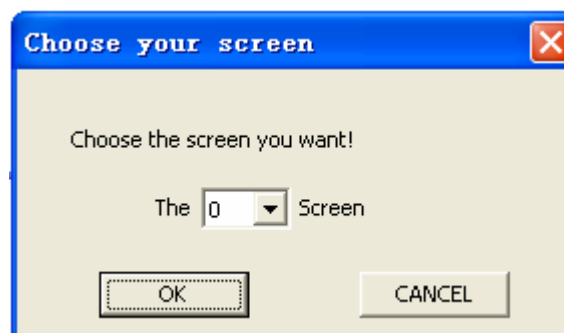


Figure 2. Choose your screen



Figure 3. Software interface

2. Click **Module**, Pops up the below window:

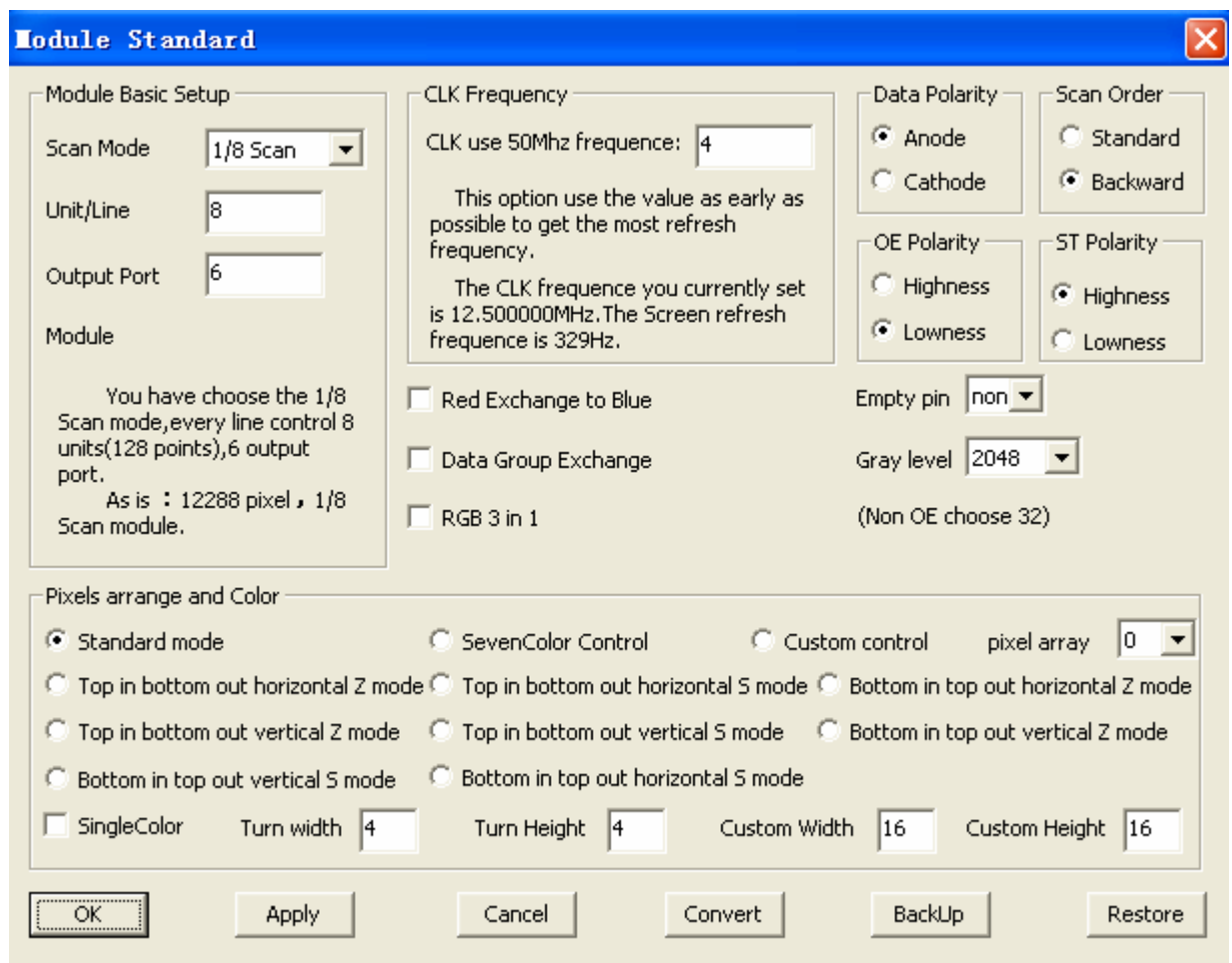


Figure 4: Module Standard

3. Click **Restore**, Load the corresponding DAT configuration file, as Figure 5:

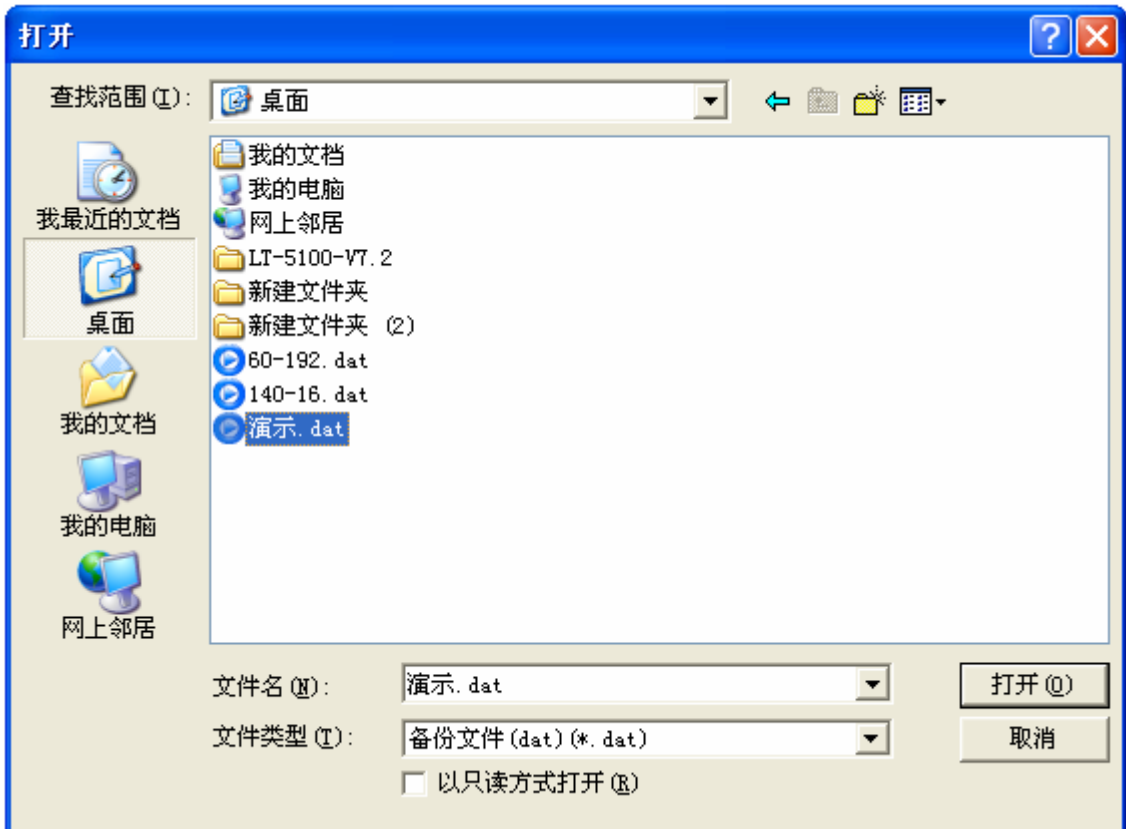


Figure 5: Load DAT configuration file

After the software configuration is completed, the software will return to the main interface, you can find the configuration is the one you wanted, as Figure 6.

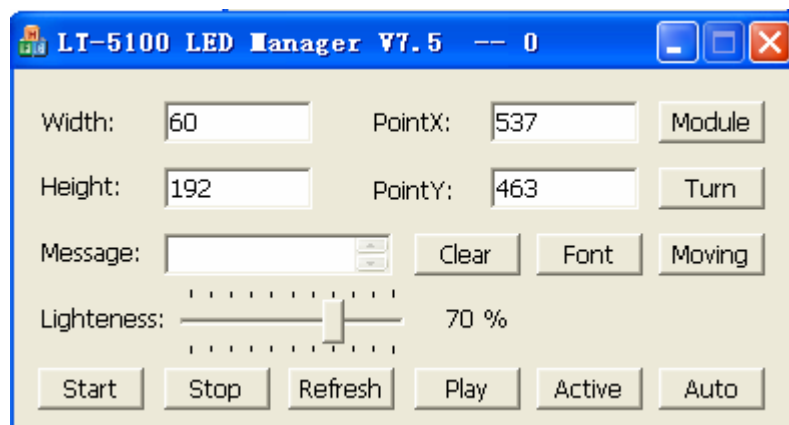


Figure 6: Return to main interface

## B. Convert & save

1. Let's start to convert an effect file and save it into the SD card, press

 in Module Standard.

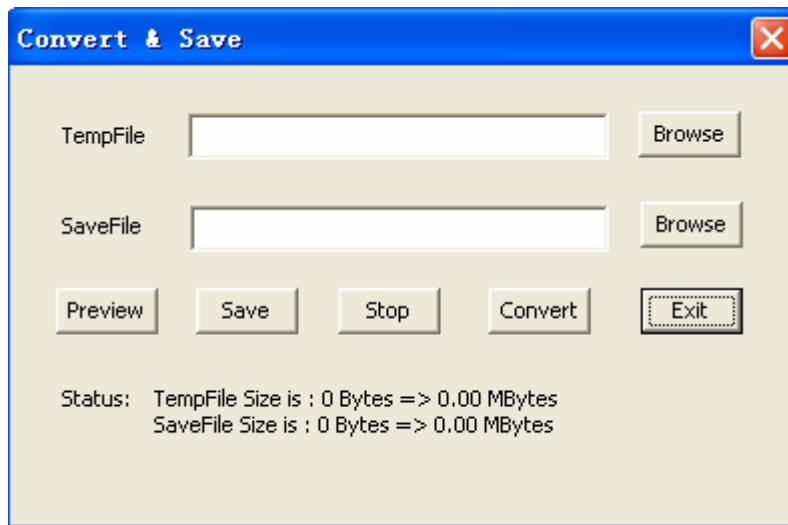


Figure 7: Convert & save

2. Press the first “browse” in the TempFile, find a route to save the temp file, see Figure 8.

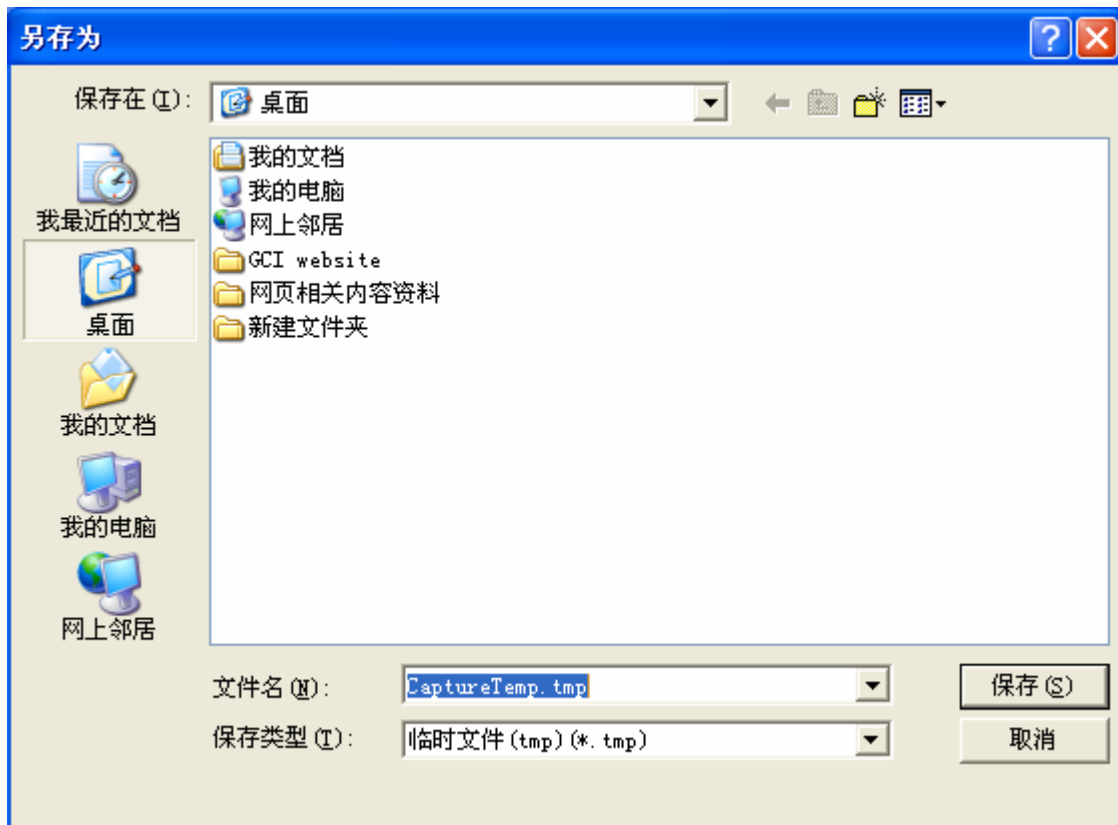


Figure 8: Save temp file

3. Press the second “browse” in the SaveFile, find a route to save the target file, see Figure 9.

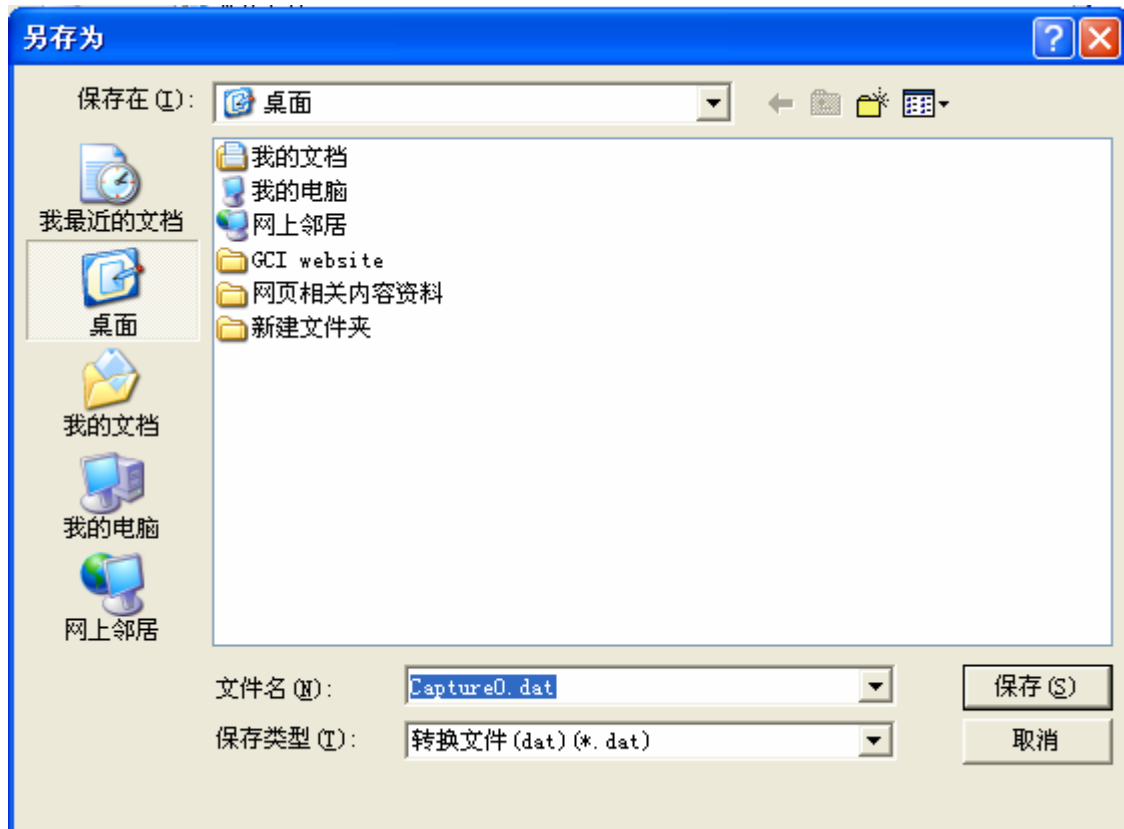


Figure 9: Save target file

4. Click “Save”, you will find a viewfinder with the same pixel size as that of the actual tube screen, meanwhile, you will find the status of TemFile that’s creating, and you can drag the mouse to move the viewfinder

For example, if you need to record a flash, firstly you open the flash, (Put the viewfinder on the flash where you want to record), press “Save”, then you can record the flash directly, if you want to record different flash files to one file, then you can start another flash after you finished the last one, press “Save”, the system will automatically add the new one to the former content. See the picture 10:

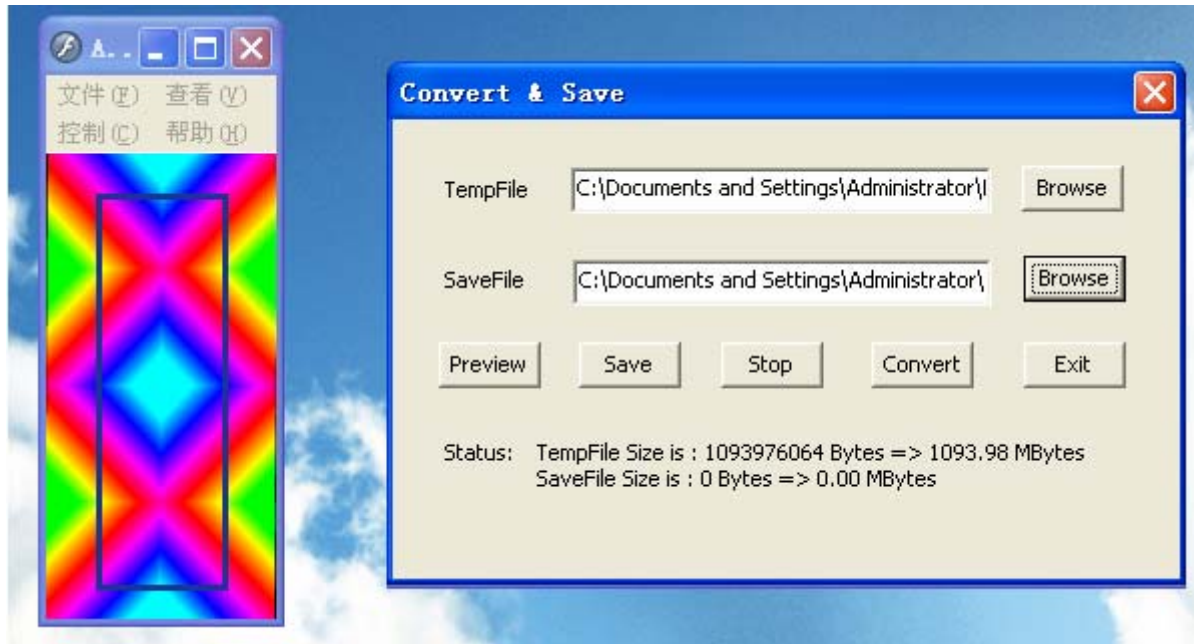


Figure 10: Save & record effect file

5. Click "stop", the viewfinder stops, the temp file recoding process is completed, see Figure 11, at the bottom of the dialogue box, it shows the status of the temp file.

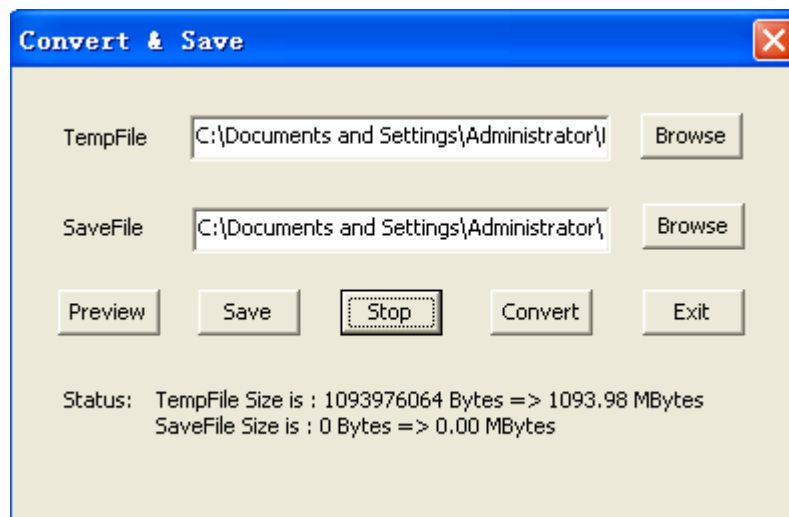


Figure 11: Stop

6. Click "convert", the system will change the temp file into the target file that can be stored in the SD card. See Figure 12, the dialogue box will show the status of the converted file, when it shows "Convert complete", that

means this step is completed.

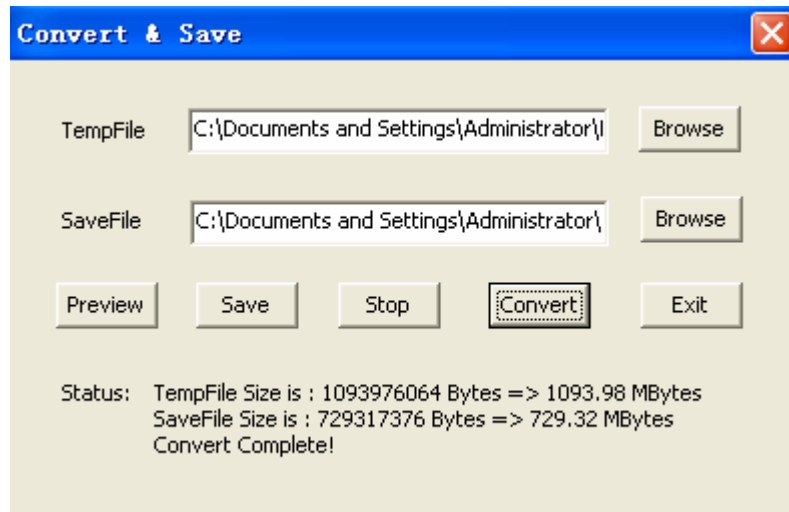


Figure 12: Convert

7. At the same time, click “preview” to see the stored file on the LED screen, this can be only seen after connected to the LT-5100 controller.
8. If record several display files, then you need to re-choose the new route for the temp file and target file, and re-name the target file. As for how to re-name it, please refer to 5.1-13.
9. Click “Exit” button, and then finish the conversion.
10. Setup active code

Find the target file, there is a .cfg format file that can be opened by the WORDPAD. See the Figure 13

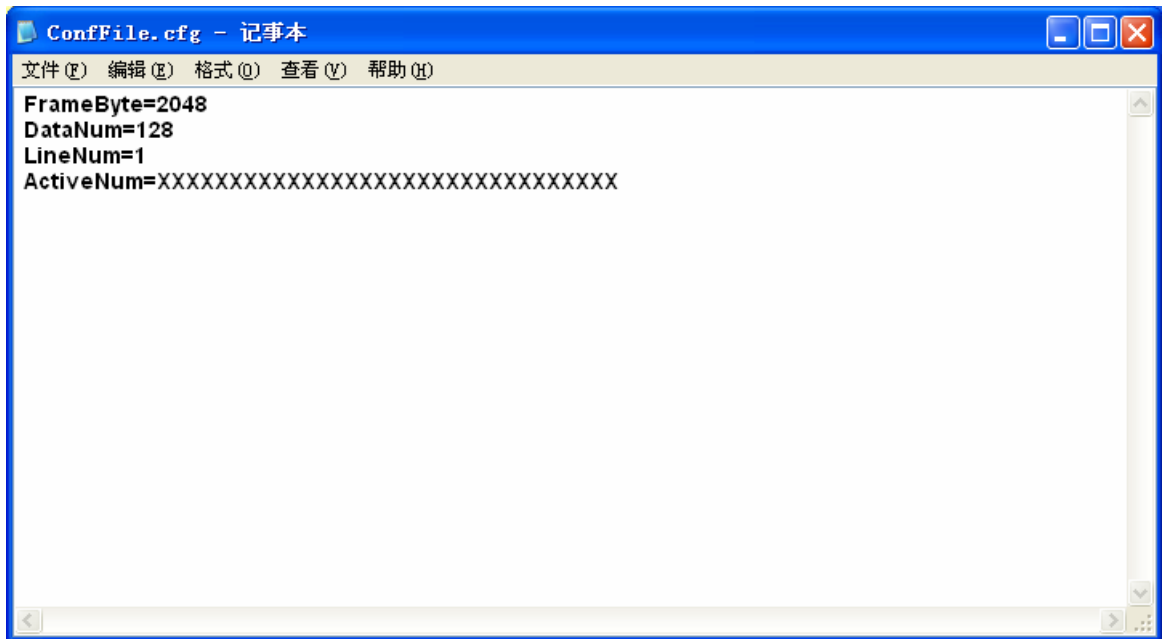


Figure13, open the file

You can see an active code with 32 bit (ActiveNum ) in the text file.

Then you just need to copy the number you want and then save it, each code has a different running time

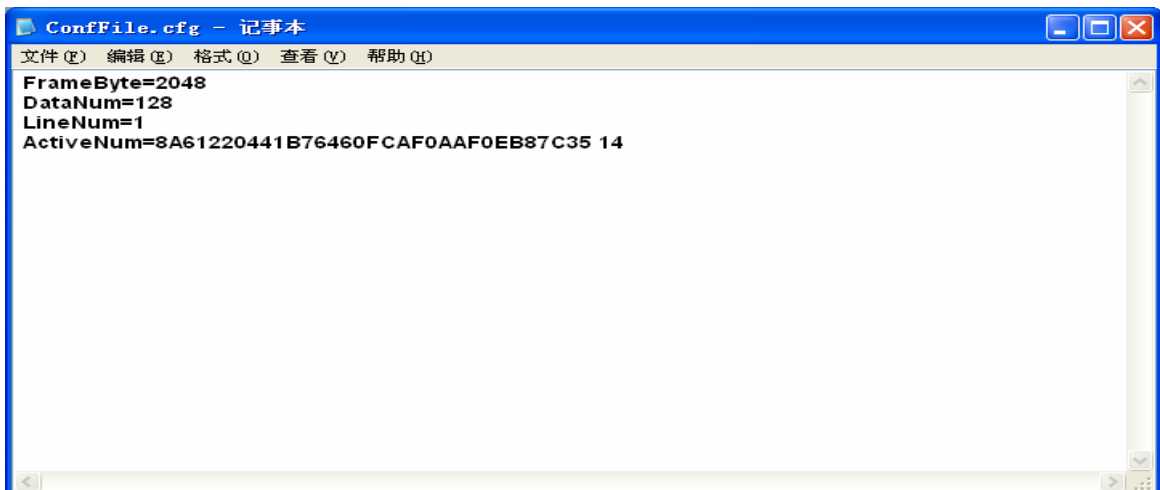


Figure 14, create the ActiveNum .

11. Copy the target file to the SD card.

Firstly, change the .dat format into sdfile\*\*.dat, \*\*can be the number between 00-31.

a) The controller can display the file sdfile00-sdfile31, 00-31 is

corresponding to the file chosen on the controller's keyboard. When chosen 00 on the controller keyboard, the controller will display the file sdfile00, when chosen 01 on the keyboard, then the controller will display the file sdfile01, so on and so on...

- b) Finally, the copied target file is named as .dat and .cfg .
- c) NOTE: Every time when copy the file to SD card, remember to format the card in advance each time. Because SD card file is FAT system, so please choose the system as FAT when format it.



Figure 15: Format the SD card