Image Extraction

From Waveshare Wiki
Jump to: navigation, search

Introduction

When developing an embedded microcontroller, you need to use LCD/OLED to display a picture. The most direct and simple way is to use corresponding tools to convert the picture into corresponding data points (actually a 2-dimensional array), and then you can use the corresponding code to display the array on the LCD/OLED display by sequence.

Steps

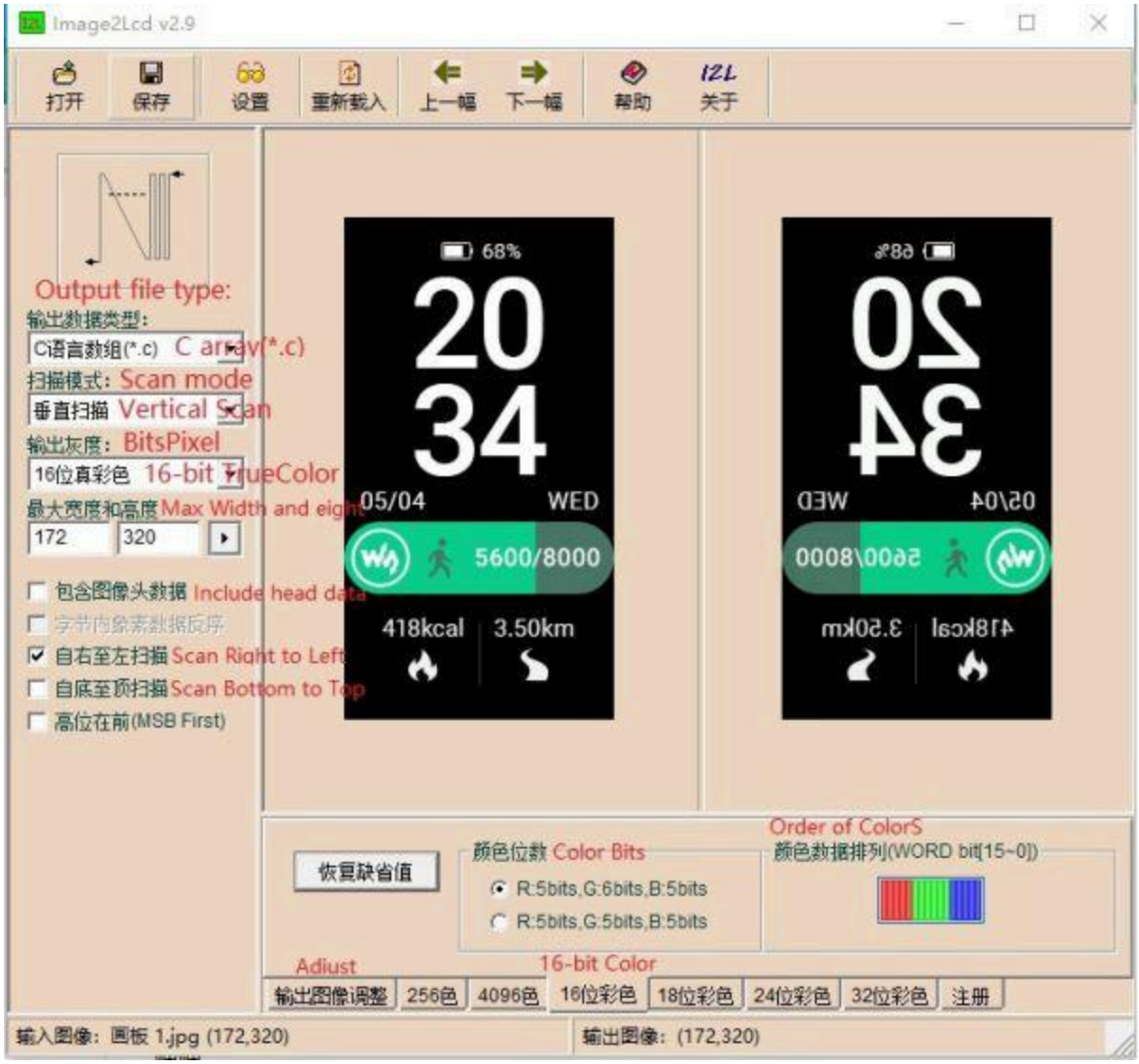
1. Click Image2Lcd2.9.zip (https://files.waveshare.com/upload/b/bd/Image2Lcd2.9.zip) to download the tool.
2. Double-click to enter the interface.

(/wiki/File:Image_extraction01.jpg)

3. Open the image that needs to be extracted. (Here we take a 1.47inch LCD Module as an example.)

- Parameter setting

```
Output data type: C array (*.c)
Scan mode: vertical
Output grayscale: 16-bit true color
Maximum width and height (set according to the actual aspect ratio of the image): 172x3
20
Output image adjustment: the default setting is fine, if you need color inversion, chec
k Color Inversion
Click 16-bit color: color bits -> RGB565, order of colors -> RGB
```



(/wiki/File:Image_extraction02.jpg)

4. Save the setting.

- The path and name are set by the user.
- The file type is .c file.
- After saving, an array will be generated, after ctrl+A selects all:

```
const unsigned char gImage_mian[110080] = { /* 0X81,0X10,0XAC,0X00,0X40,0X01,0X01,0X1B, */
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
```

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- Copy it to the "Image. c" file.

```
> const unsigned char gImage_1inch47_1[110080] = { /* 0X00,0X10,0X40,0X01,0XAC,0X00,0X01,0X1B
> const unsigned char gImage_1inch8_1[40960] = { /* 0X01,0X10,0X80,0X00,0XA0,0X00,0X01,0X1B,
> const unsigned char gImage_1inch3_1[115200] = { /* 0X00,0X10,0XF0,0X00,0XF0,0X00,0X01,0X1B,
> const unsigned char gImage_2inch_1[153600] = { /* 0X00,0X10,0X40,0X01,0XF0,0X00,0X01,0X1B,
  const unsigned char gImage_mian[110080] = { /* 0X81,0X10,0XAC,0X00,0X40,0X01,0X01,0X1B, */
  0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
  0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
  0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
  0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
  0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,0X00,
```

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- And declare it in Image.h:

```
#ifndef _IMAGEDATA_H_
#define _IMAGEDATA_H_

extern const unsigned char Signal816[];
extern const unsigned char Msg816[];
extern const unsigned char Bat816[];
extern const unsigned char Bluetooth88[];
extern const unsigned char GPRS88[];
extern const unsigned char Alarm88[];

extern const unsigned char gImage_0inch96_1[];
extern const unsigned char gImage_1inch14_1[];
extern const unsigned char gImage_1inch3_C_1[];

extern const unsigned char gImage_1inch51_1[];

extern const unsigned char gImage_1inch44_1[];
extern const unsigned char gImage_1inch47_1[];
extern const unsigned char gImage_1inch8_1[];
extern const unsigned char gImage_1inch3_1[];
extern const unsigned char gImage_2inch_1[];

extern const unsigned char gImage_mian[];
```

(/wiki/File:Image_extraction05.jpg)

- Finally, call the main function and map it to the screen.

```
Paint_DrawImage(gImage_mian,0,0,320,172);
LCD_1IN47_Display(BlackImage);
DEV_Delay_ms(2000);
```

(/wiki/File:Image_extraction06.jpg)

The effect is shown below:

(/wiki/File:Image_extraction07.jpg)

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