

1. Introduction to Testing Platform

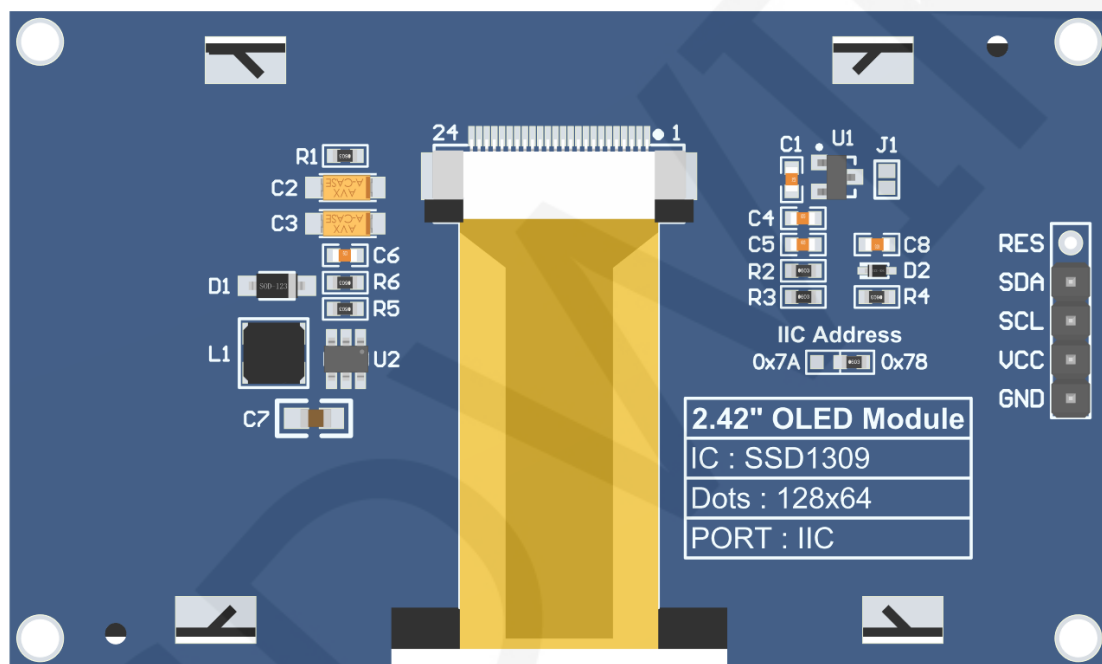
Development board: STC89/STC12 development board

MCU : STC89C52RC、STC12C5A60S2

Frequency : 11.0592MHZ

2. Pin connection instructions

The display module is connected to the microcontroller using a DuPont cable, with specific instructions as follows:



Module Back Pins

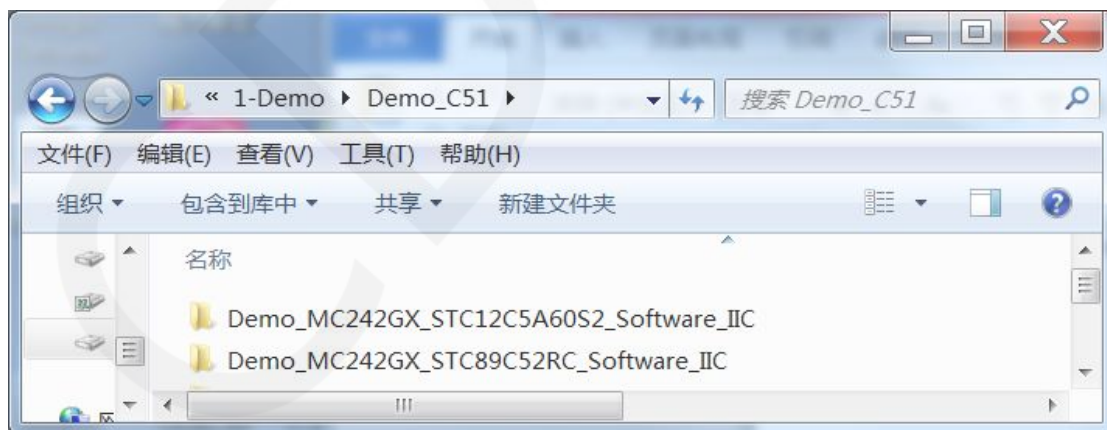
NOTE:

- The **IIC Address** resistor is used to select the IIC slave device address. If it is soldered on the 0x78 side, select the 0x78 slave device address. If it is soldered on the 0x7A side, select the 0x7A slave device address;
- The RES pin row is not soldered by default. If the reset function needs to be controlled in the program, it needs to be soldered;

STC89C52RC and STC12C5A60S2 Microcontrollers IIC Test Program Wiring Instructions			
Number	Module pins	Corresponding STC89/STC12 development board wiring pins	Remarks
1	GND	GND	OLED screen power supply ground
2	VCC	5V/3.3V	OLED screen power supply positive
3	SCL	P17	IIC bus clock signal
4	SDA	P15	IIC bus data signal
5	RES	Not welded	The pin arrangement is not soldered by default. If the reset function needs to be controlled in the program, it needs to be soldered

3. Demo Function Description

This testing program includes software IIC programs for two types of MCU, STC89C52RC and STC12C5A60S2, which are located in **Demo_C51** directory, as shown in the following figure:



✧ Description of sample program content

The sample program includes the following content:

- A. Home screen display;
- B. Single color screen brushing

- C. English display;
- D. Display of numbers and symbols
- E. Chinese display;
- F. BMP monochrome image display;

✧ Example program display direction switching instructions

Found macro definition **USE_HORIZONTAL** and **COLOR_STATE** in **HARDWARE\OLED\oled.h** file, as shown in the following:

```
#define USE_HORIZONTAL 0 // 设置显示方向: 0-正常, 1-旋转180度  
#define COLOR_STATE 0 // 设置显示模式: 0-正常显示, 1-反色显示
```

Modify **USE_HORIZONTAL** and **COLOR_STATE** macro according to the following definition:

```
#define USE_HORIZONTAL 0 //0 ° rotation (Default value)  
#define USE_HORIZONTAL 1 //180 ° rotation  
#define COLOR_STATE 0 //Black background, monochrome display  
content(Default value)  
#define COLOR_STATE 1 //Monochrome background, black display content
```

✧ Example program IIC slave device address modification instructions

The IIC slave device address has been modified in hardware, and corresponding modifications need to be made in software. First, locate the macro definition **IIC_SLAVE_ADDR** in the **HARDWARE\IIC\iic.h** file, as shown in the following figure:

```
//定义IIC从设备地址  
#define IIC_SLAVE_ADDR 0x78 //0x7A
```

Modify **IIC_SLAVE_ADDR** macro definition according to the following definition is sufficient to:

```
#define IIC_SLAVE_ADDR 0x78 //Slave device address is 0x78 (default value)  
#define IIC_SLAVE_ADDR 0x7A //Slave device address is 0x7A
```

4. Demo Usage Instructions

✧ Installing development tool software

Firstly, you need to install the development tool software. Keil5 and stc-isp software are used here, where Keil5 is used for code editing and compilation, and stc-isp is used for download. Please refer to the online download and installation methods for both software.

✧ Installing chip packages

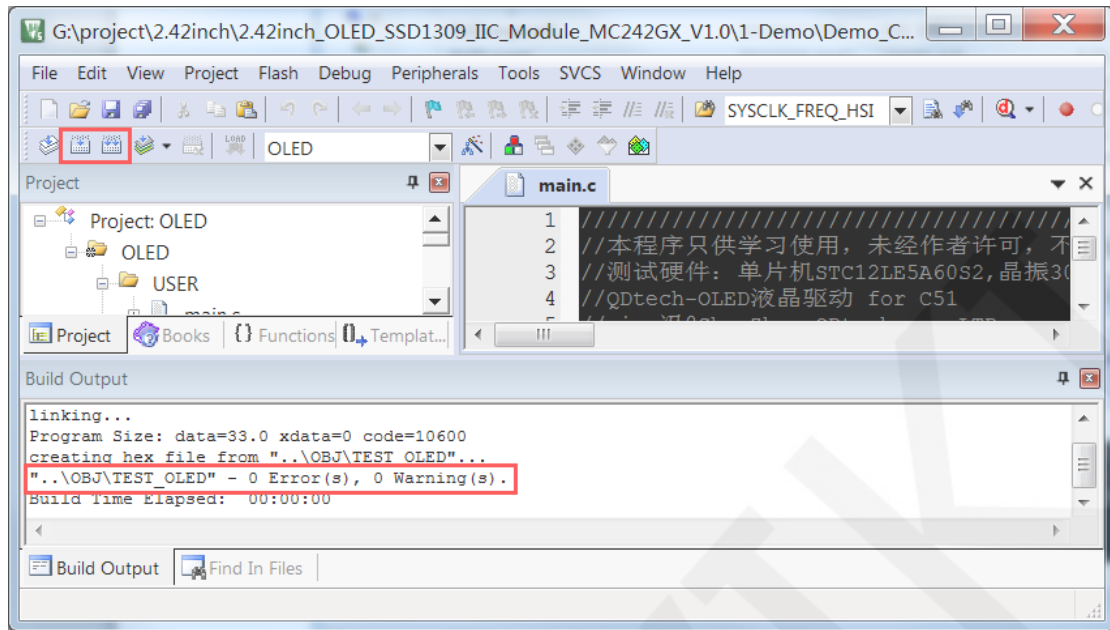
After installing keil5, it is necessary to install the C51 chip package, otherwise the C51 chip cannot be found and the C51 project cannot be created. Please consult online for specific installation methods.

✧ Compiling Programs

After the development tool and chip package are successfully installed, open the **PROJECT** directory under the sample program, locate the **uvprojx** file, double-click to open the sample project, as shown in the following figure:



After opening the sample project, you can make modifications to the project code (or not). After the modifications are completed, click the compile button to compile the code. The following prompt appears, indicating successful compilation, as shown in the following figure:

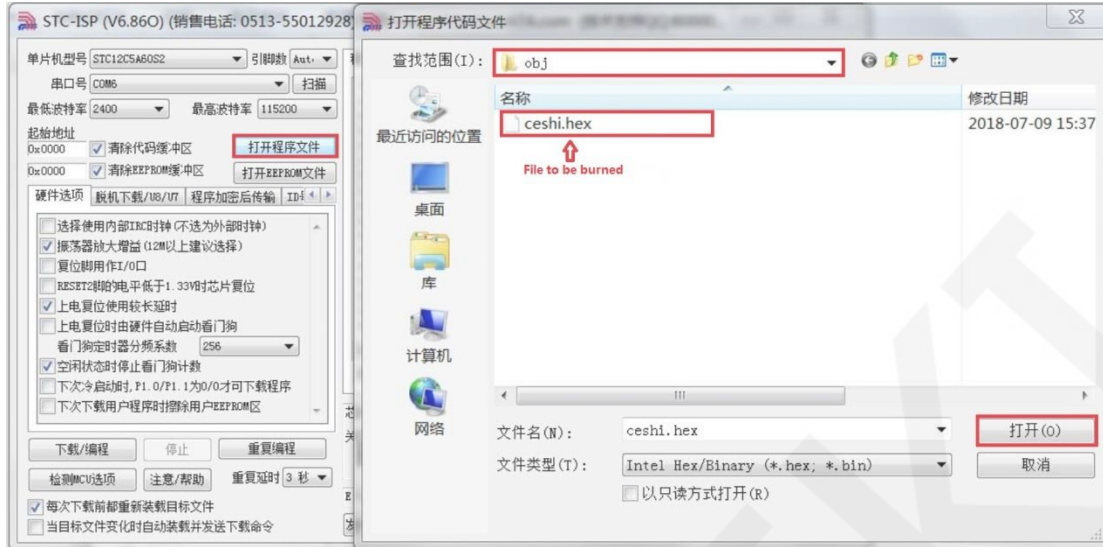


❖ Download and Run Programs

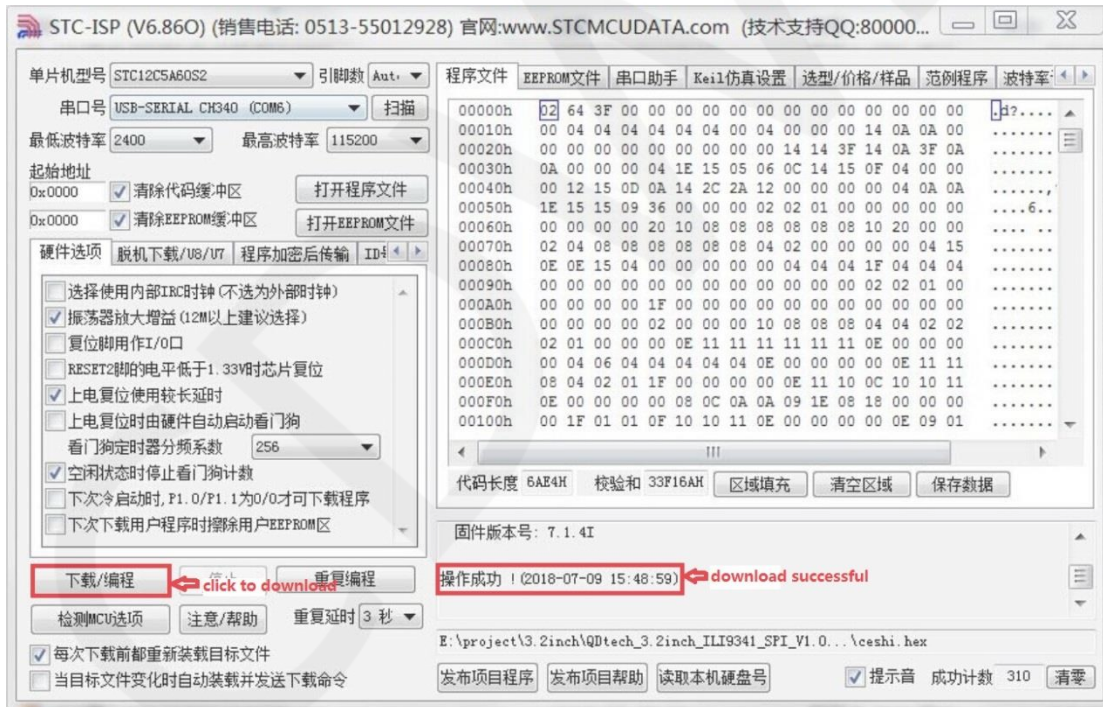
- A. Open the **STC-ISP** software for program download, first select the correct microcontroller model and baud rate, and set them as shown in the following figure:



- B. Click to open the program file ->select the directory where the compiled hex file is located ->select the hex file ->click the open button, as shown in the following figure:



C. Click the **download** button to power on the microcontroller again, and the program will be burned. When the "**Operation successful**" prompt appears, it indicates successful burning. The operation is shown in the following figure:



D. If the display module displays characters and graphics normally, it indicates that the program has run successfully.