# 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:

- A. 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;
- B. 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;

S	C89C52RC	and STC12C5A60 Program Wiring	S2 Microcontrollers IIC Test 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		设置显示方向:	0-正常,1-旋转180度
define	COLOR STATE		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 <u>#define IIC\_SLAVE\_ADDR</u> 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

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# 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:

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组织▼	包含到库中 • 共享 • 新建文件夹			-	0
•	名称	修改日期	类型	大小	•
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<b>\$</b>	OLED.uvopt	2023/7/31 14:47	UVOPT 文件	8 KB	
II II	🖻 OLED.uvproj	2022/9/2 17:00	礦ision4 Project	16 KB	_
9	sys.lst	2023/7/31 14:34	LST 文件	5 KB	=
	test.lst	2023/7/31 14:34	LST 文件	10 KB	~

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:

G:\project\2.42inch\2.42inch_OLED_SSD1309_IIC_Module_MC242GX_V1.0\1-Demo\Demo_C	
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help	
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Build Output	<b>д 🖂</b>
<pre>linking Program Size: data=33.0 xdata=0 code=10600 creating hex file from "\OBJ\TEST OLED" "\OBJ\TEST_OLED" - 0 Error(s), 0 Warning(s). Build Time Elapsed: 00:00:00 </pre>	
E Build Output	4

## ♦ 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:

낙机型号 STC12C5A60S2	▼ 引脚数 Aut, ▼	程序文件	EEPROM文件	串口助	手 Kei	1仿真	设置	选型/化	介格/样	品范	的程序	波特率	4
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复位脚用作I/0口		000C0h	02 01 0	0 00 00	0 OE 1	1 11	11 11	11 1	1 0E	00 00	00		
RESET2脚的电平低于1.33V时芯片	复位	000D0h	00 04 0	6 04 04	04 0	4 04	0E 00	00 0	0 00	0E 11	11		
✓ 上由.复位使用较长延时		000E0h	08 04 0	2 01 11	00 00	0 00	00 OE	11 1	0 00	10 10	11		
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看门狗定时器分频系数 256	•	•			1	1						P	
<ul> <li>空闲状态时停止看门狗计数</li> </ul>		伊冯长度	BARAH #	केवे मेन 33	FIGAH	⊡∔at	指六	1	たいが		见方粉板		
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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:

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1730/mm12 101 重复项目 补到MUTI641页 注音/和助 重复项目 3 秋 ▼		文件类型(T):	Intel Hex/Binary (*.hex; *.b	in) 🔹	取消
☑ 每次下载前都重新装载目标文件 当目标文件变化时自动装载并发送下载命令			□ 以只读方式打开(R)		

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:

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看门狗定时器分频系数 256 ▼	*						111										•	
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D. If the display module displays characters and graphics normally, it indicates that the program has run successfully.