1. Introduction to Testing Platform

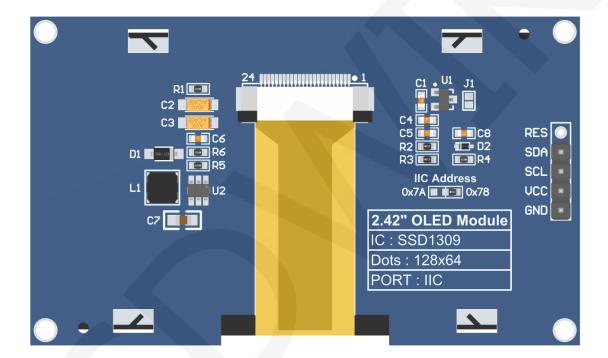
Development board: Arduino UNO/MEGA2560

MCU: AVR_ATmega328P/AVR_ATmega2560

Frequency: 16MHz/16MHz

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;

Arduino UNO and Mega2560 microcontroller IIC test program wiring instructions										
		develop		onding to oard wiring pin						
Number	Module Pin	Hardw	are IIC		Remarks					
		UNO	Mega	SoftWare IIC						
			2560							
1	GND		GI	ND	OLED screen power supply ground					
2	VCC	5V/3		3.3V	OLED screen power supply positive					
3	SCL	A5	21	A5	IIC bus clock signal					
4	SDA	A4	A4 20 A		IIC bus data signal					
5	RES		Not v	velded	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 set of testing programs includes two MCU programs, Arduino UNO and Mega2560. Each MCU program includes iic testing programs, and each testing program includes hardware and software functional testing, which is located in **Demo_**

UNO_ Mega2560 directory, as shown in the following figure:



♦ Description of sample program content

The testing program includes the following test items:

A. Example01-graph_ Test is a graphical display test

- B. Example02 string_ Test is a character display test;
- C. Example03 show_ BMP is a BMP bitmap display test;

♦ 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 open any IIC sample program and locate the **setup** function. If using the 0x7A slave device address, there is no need to annotate the line of code **u8g2.setl2CAddress(0x7A)** (to make them effective). If using the 0x78 slave device address, the line of code **u8g2.setl2CAddress(0x7A)** need to be annotated (to make them ineffective), as shown in the following figure:

```
void setup(void) {
    /*When using 0x7A slave device address, please use the following definition*/
    //u8g2.setI2CAddress(0x7A);
    u8g2.begin();
```

4. Demo Usage Instructions

♦ Installing development tool software

Download the installation package from the Arduino official website.

Download address: https://www.arduino.cc/en/software

Download the corresponding installation package according to your PC system,

as shown in the following figure (the version in the picture may not be the latest version, and the download interface may not be the latest):



Arduino IDE 1.8.19

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. This software can be used with any Arduino board.

Refer to the **Getting Started** page for Installation instructions.

SOURCE CODE

Active development of the Arduino software is **hosted by GitHub**. See the instructions for **building the code**. Latest release source code archives are available **here**. The archives are PGP-signed so they can be verified using **this** gpg key.

After the download is completed, unzip and click Install.

♦ Installing software library



After the development environment is set up, the software library used by the sample program needs to be copied to the project library directory so that the sample program can be called. The software library is located in the

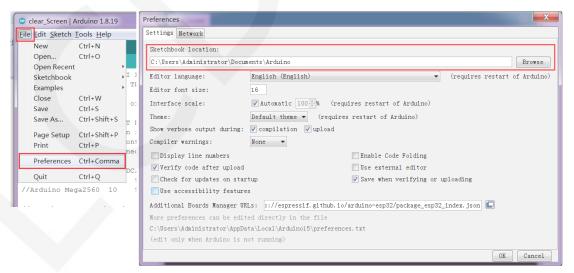
Demo_UNO_Mega2560\Install libraries directory, as shown in the following figure:

	1 2 - 44 4. 4	A . 2 . 4			X
C C + Memo_UNO_Mega2560 + Install libr	aries 🕨 👻 🍫	搜索 Insta	ll libraries	5	٩
文件(F) 编辑(E) 查看(V) 工具(T) 帮助(H)					
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	
U8g2_Arduino	2023/6/21 9:41	文件夹			
	ш				

You can also download the latest software library from Github and unzip it (for easy differentiation, you can rename the unzipped folder, as shown in the Install libraries directory), and then copy it to the engineering library directory. The download address is as follows:

https://github.com/olikraus/U8g2 Arduino

The default path for the engineering library directory is **C: Users\Administrator \Documents\Arduino\libraries**. You can also change the project library directory: open the Arduino IDE software, click **File** ->**Preferences**, and reset the **Sketchbook location** in the pop-up interface, as shown in the following figure:



Copy the software library to the project library directory, as shown in the following

figure:

	= 1.0ml, 78, 13 10 813, Specificat	
	• ▶ 库 ▶ 文档 ▶ Arduino ▶ libraries ▶	▼ 4 搜索 libraries P
文件(F) 编	编辑(E) 查看(V) 工具(T) 帮助(H)	
组织▼	賞打开 共享▼ 电子邮件 新建文件夹	III - 🗋 🔞
	<mark>文档库</mark> libraries	排列方式: 文件夹 ▼
	名称	·
	👢 U8qlib	Ξ
	👢 U8g2_Arduino	
	L TouchScreen	-
3 -		4

♦ Compile and Run Programs

- A. Connect the display module to the UNO or Mega2560 development board, and then power up the development board.
- B. Open any example under Demo_UNO_Mega2560 directory (Here is the

Example01-graph_test of the hardware SPI testing program as an example), as

shown in the following figure:

A H R MALAN	G to be dealer			
C C V C Memo_MC242GX_UNO_Mega2560_Ha	ardware_IIC 🕨 Exam	ple01-graph_test	▼ 47 搜	索 Example01-graph_test 👂
文件(F) 编辑(E) 查看(V) 工具(T) 帮助(H)				
组织▼ 包含到库中▼ 共享▼ 新建文件夹				· · · · · · · · · · · · · · · · · · ·
名称 名称	修改日期	类型	大小	
Example01-graph_test.ino	2023/8/11 18:45	Arduino file	9 KB	

C. After opening the sample project, select the UNO or Mega2560 device, as shown in the following figure:

Select UNO:

ile Edit Sketch To	pols Help		「 编辑
2	Auto Format Archive Sketch Fix Encoding & Reload	Ctrl+T	
// IMPORTANT // CONFIGURE	Manage Libraries Serial Monitor Serial Plotter	Ctrl+Shift+I Ctrl+Shift+M Ctrl+Shift+L	BOARD.
//This progr //when using //the SDA pi	Teensy 4 Security WiFi101 / WiFiNINA Firmware Upda	ter	black, white, red, green, blue.
//if you don	Board: "Arduino Uno"	1	Boards Manager he pin c
//other pins	Port	1	Arduino AVR Boards Arduino Yún
//pin usage	Get Board Info		ESP32 Arduino
// //Arduino Un	Programmer Burn Bootloader	1	Teensyduino Arduino Duemilanove or Diecimila 12 5 50/73.3 50 5 57/3.3

Select Mega2560:

💿 clear_Screen Ard	luino 1.8.19		_			选择▼	百度网
File Edit Sketch To	ols Help				5	编辑	保存
	Auto Format Archive Sketch	Ctrl+T		₽ ▼			
// IMPORTANT // CONFIGURE	Fix Encoding & Reload Manage Libraries Serial Monitor	Ctrl+Shift+I Ctrl+Shift+M	BOARD.	-			
//This progr	Serial Plotter Teensy 4 Security	Ctrl+Shift+L	lack, white, red, green	,blue. ^Ξ	1		
//when using //the SDA pi	WiFi101 / WiFiNINA Firmware Updater		dware spi lines to t an't be modified	he LCD,			
//if you don //other pins	Board: "Arduino Mega or Mega 2560" Processor: "ATmega2560 (Mega 2560)"		Boards Manager Arduino AVR Boards	e pin c Arduino Y	(úp		
//pin usage	Port Get Board Info		ESP32 Arduino	Arduino U		or Diecir	nila
//Arduino Un //Arduino Me	Programmer Burn Bootloader		12 5 5V/3.3V 50 5 5V/3.3V	Arduino N			
//Remember to /*******	set the pins to suit your disp.	lay module!	****	Arduino M Arduino L	Mega ADK .eonardo		

D. Set the port. If you choose Mega2560, you also need to set the processor based

on the development board used, as shown in the following figure:

💿 clear_Screen Ard	uino 1.8.19					
File Edit Sketch Too	ols Help					
	Auto Format	Ctrl+T				ø
clear_Screen	Archive Sketch Fix Encoding & Reload					
// IMPORTANT	Manage Libraries	Ctrl+Shift+I				*
// CONFIGURE	Serial Monitor	Ctrl+Shift+M	BOARD.			
//This progr	Serial Plotter	Ctrl+Shift+L	lack,w	hite,	red, green,	blue.
//when using //the SDA pi	Teensy 4 Security WiFi101 / WiFiNINA Firmware Updater		dware an't b	-	ines to th	ne LCD,
//if you don	Board: "Arduino Mega or Mega 2560"	•			nd set the	e pin c
//other pins	Processor: "ATmega2560 (Mega 2560)"				60 (Mega 250	50)
//pin usage	Port: "COM49"	P	ATm /MTSO	nega12	80 VCC	GND
// //Arduino Un	Get Board Info		12	LED 5		GND
//Arduino Me	Programmer Burn Bootloader	Þ	50	5		GND
//թ	Briu Roonoadel	1 1 - 1				

E. Click the upload button to compile and download the program, as shown in the

following figure:

💿 clear_Screen Arduino 1	.8.19								
<u>File Edit Sketch Tools He</u>	elp								
									<u> </u>
clear_Screen									
// IMPORTANT: LCDWI	KI_S	PI LIBR	ARY MUS	T BE SPECI	FICAL	LY			-
// CONFIGURED FOR E	ITHE	R THE T	FT SHIE	LD OR THE	BREAK	OUT BOARD.			
									=
//This program is a	dem	o of cl	earing	screen to	displ	ay black,w	hite,	red, green,	blue.
//when using the BR				-			-		1e LCD,
//the SDA pin and S	СК р	in is d	lefined	by the sys	tem a	nd can't b	e mod	lified.	
//if you don't need	to	control	the LE	D pin,you	can s	et it to 3	.3V a	nd set the	e pin c
//other pins can be	def	ined by	yousel	f, for exam	ple				
//pin usage as foll	ow:								
11	CS	DC/RS	RESET	SDI/MOSI	SCK	SDO/MISO	LED	VCC	GND
//Arduino Uno	10	9	8	11	13	12	5	5V/3.3V	GND
//Arduino Mega2560	10	9	8	51	52	50	5	5V/3.3V	GND
//Remember to set t	he p	ins to	suit yo	ur display	modu	le!			
/*****	****	*****	******	******	****	******	****	******	*****
* @attention									
*									-

F. If the following prompt appears, it indicates that the program has been compiled

and downloaded successfully, and has already been run:

💿 clear_Screen Arduino 1.	8.19		
<u>File Edit Sketch Tools H</u> e	lp		
			<mark>₽</mark>
clear_Screen			
· •	111		۱.
Done uploading.			
avrdude: verifying . avrdude: 11806 bytes	 s of flash verified	*******	100% 1.43s [^]
avrdude done. Thank	, you.		
1			Arduino Uno on COM49

G. If the display module displays content, it indicates that the program has run successfully.