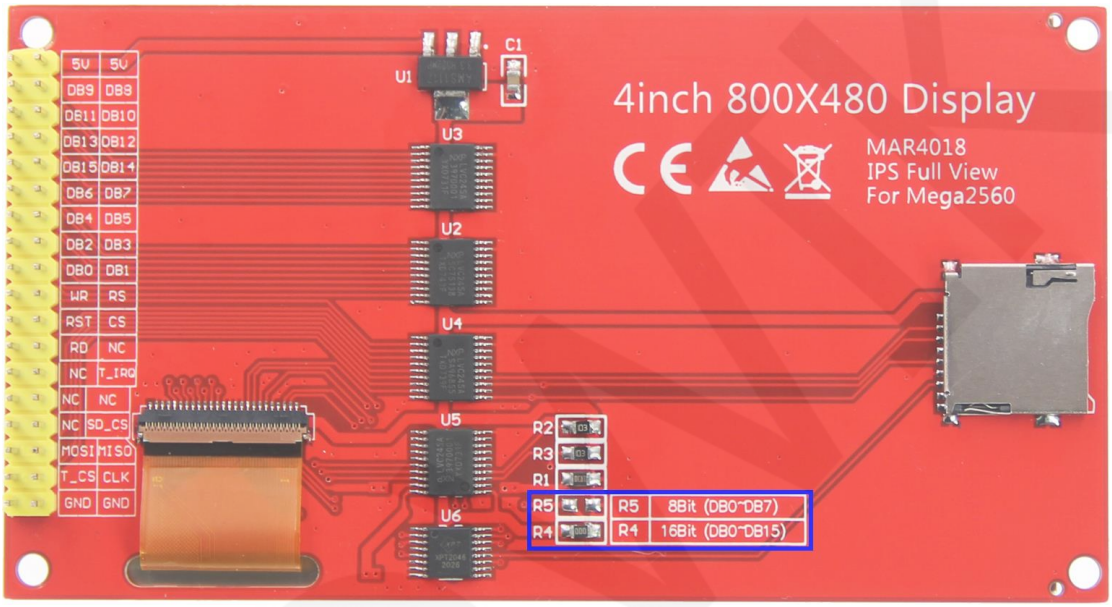
Test platform introduction:

Development board: STC89/STC12 development board

MCU: STC89C52RC, STC12C5A60S2

Crystal frequency : 12MHZ

Wiring instructions:



Picture1. Pin silkscreen picture

Note:

1. **The pins labeled NC in Picture 1 are not used and do not require wire connection；**

Important Note:

1. **The following pin numbers 1~30 are the pin number of Module pin with PCB backplane of our company. If you purchase a bare screen, please refer to the pin definition of the bare screen specification, refer to the wiring according to the signal type instead of directly Wire according to the following module pin numbers. For example: LCD_CS is 20 pin on our module. It may be x pin on different size**

bare screen. The following wiring program instructions tell you to connect LCD_CS signal to the P1.3 pin of C51 microcontroller.

2. About VCC supply voltage: If you purchase a module with PCB backplane, VCC/VDD can be connected to 5V (module has integrated ultra low dropout 5V to 3.3V circuit), if you buy a bare screen LCD, remember only Can connect to 3.3V.
3. About the backlight voltage: the module with the PCB backplane has access to 3.3 V and no more manual access is required. If you are buying a bare screen, the LEDA is connected to 3.0V-3.3V and the LEDKx is grounded.

STC89C52RC microcontroller test program wiring instructions				
Number	Module Pin	Corresponding to STC89 development board wiring pin		Remarks
		8-bit mode	16-bit mode	
1	5V	5V		Power pin
2	5V			
3	DB8	No need to connect	P20	Data bus high 8-bit pin
4	DB9		P21	
5	DB10		P22	
6	DB11		P23	
7	DB12		P24	
8	DB13		P25	
9	DB14		P26	
10	DB15		P27	
11	DB7	P37		Data bus low 8-bit pin
12	DB6	P36		
13	DB5	P35		
14	DB4	P34		
15	DB3	P33		

16	DB2	P32	
17	DB1	P31	
18	DB0	P30	
19	RS	P12	LCD register / data selection pin(high level: data, low level:register)
20	WR	P11	LCD write control pin
21	CS	P13	LCD chip select control pin(low level active)
22	RST	P14	LCD reset control pin(low level active)
23	NC	No need to connect	Undefined, reserved
24	RD	P10	LCD read control pin
25	T_IRQ	No need to connect (cannot test touch)	Touch screen interrupt control pin(low level active)
26	NC	No need to connect	Undefined, reserved
27	NC		
28	NC		
29	SD_CS	No need to connect	Extended reference: SD card select pin
30	NC	No need to connect	Undefined, reserved
31	MISO	No need to connect (cannot test touch)	SPI bus input pin (extended application)
32	MOSI	No need to connect (cannot test touch)	SPI bus output pin (extended application)
33	CLK	No need to connect (cannot test touch)	SPI bus clock pin (extended application)
34	T_CS	No need to connect (cannot test touch)	Touch screen chip select pin(low level active)
35	GND	GND	Power ground pin
36	GND		

STC12C5A60S2 microcontroller test program wiring instructions				
Number	Module Pin	Corresponding to STC12 development board wiring pin		Remarks
		8-bit mode	16-bit mode	
1	5V	5V		Power pin
2	5V			
3	DB8	No need to connect	P20	Data bus high 8-bit pin
4	DB9		P21	
5	DB10		P22	
6	DB11		P23	
7	DB12		P24	
8	DB13		P25	
9	DB14		P26	
10	DB15		P27	
11	DB7	P07		Data bus low 8-bit pin
12	DB6	P06		
13	DB5	P05		
14	DB4	P04		
15	DB3	P03		
16	DB2	P02		
17	DB1	P01		
18	DB0	P00		
19	RS	P12		LCD register / data selection pin(high level: data, low level:register)
20	WR	P11		LCD write control pin
21	CS	P13		LCD chip select control pin(low level active)
22	RST	P33		LCD reset control pin(low level active)
23	NC	No need to connect		Undefined, reserved
24	RD	P10		LCD read control pin

25	T_IRQ	P40	Touch screen interrupt control pin(low level active)
26	NC	No need to connect	Undefined, reserved
27	NC		
28	NC		
29	SD_CS	No need to connect	Extended reference: SD card select pin
30	NC	No need to connect	Undefined, reserved
31	MISO	P35	SPI bus input pin (extended application)
32	MOSI	P34	SPI bus output pin (extended application)
33	CLK	P36	SPI bus clock pin (extended application)
34	T_CS	P37	Touch screen chip select pin(low level active)
35	GND	GND	Power ground pin
36	GND		

Demo function description:

1. This set of test program procedures is applicable to the STC89C52RC and STC12C5A60S2 platforms;
2. Please follow the above wiring instructions to find the corresponding development board and MCU for wiring;
3. This set of test program supports 8-bit and 16-bit data bus mode switching. For details, see the following mode setting instructions (This module supports 8-bit and 16-bit data bus mode switching, and defaults to 8-bit mode);
4. This set of tests supports display switching in four directions. For details, see the following display direction switching instructions;
5. STC89C52RC microcontroller RAM is only 25KB, so only a simple brush test;
6. STC12C5A60S2 microcontroller test program contains the following test items:
   A. the main interface displays the test;
   B. simple brush test;

C. rectangular drawing and filling test;

D. circular drawing and filling test;

E. triangle drawing and filling test;

F. English display test;

G. Chinese display test;

H. picture display test;

I. rotating display test;

J. Touch test

Mode switching instructions:

Find the macro definition LCD_USE8BIT_MODEL in lcd.h, as shown below:

```
#define LCD_USE8BIT_MODEL   1    //定义数据总线是否使用8位模式 0,使用16位模式.1,使用8位模式
//////////////////////////////////////////////////////////////////////////////////
```

LCD_USE8BIT_MODEL 0 // Use 16-bit data bus mode

LCD_USE8BIT_MODEL 1 // Use 8-bit data bus mode

Note:

1. **This module hardware supports 8-bit and 16-bit data bus mode switching. For details, see the blue box in Picture 1 above or refer to the module schematic (this module defaults to 16-bit data bus mode);**
2. **Not every LCD screen supports 8-bit/16-bit mode. Please check with us to see if you have purchased it;**
3. **After the 8/16-bit switch is performed on the software, the hardware also needs to be changed to the corresponding mode to be able to drive normally. Please consult us for how to modify the bare screen.**

Display direction switching instructions:

Find the macro definition USE_HORIZONTAL in lcd.h as shown below:

```
//////////////////////////////////用户配置区/////////////////////////////////////
#define USE_HORIZONTAL      0//定义液晶屏顺时针旋转方向  0-0度旋转，1-90度旋转，2-180度旋转，3-270度旋转
```

USE_HORIZONTAL 0 //0° Rotate

USE_HORIZONTAL 1 //90° Rotate

USE_HORIZONTAL 2 //180° Rotate

USE_HORIZONTAL 3 //270° Rotate