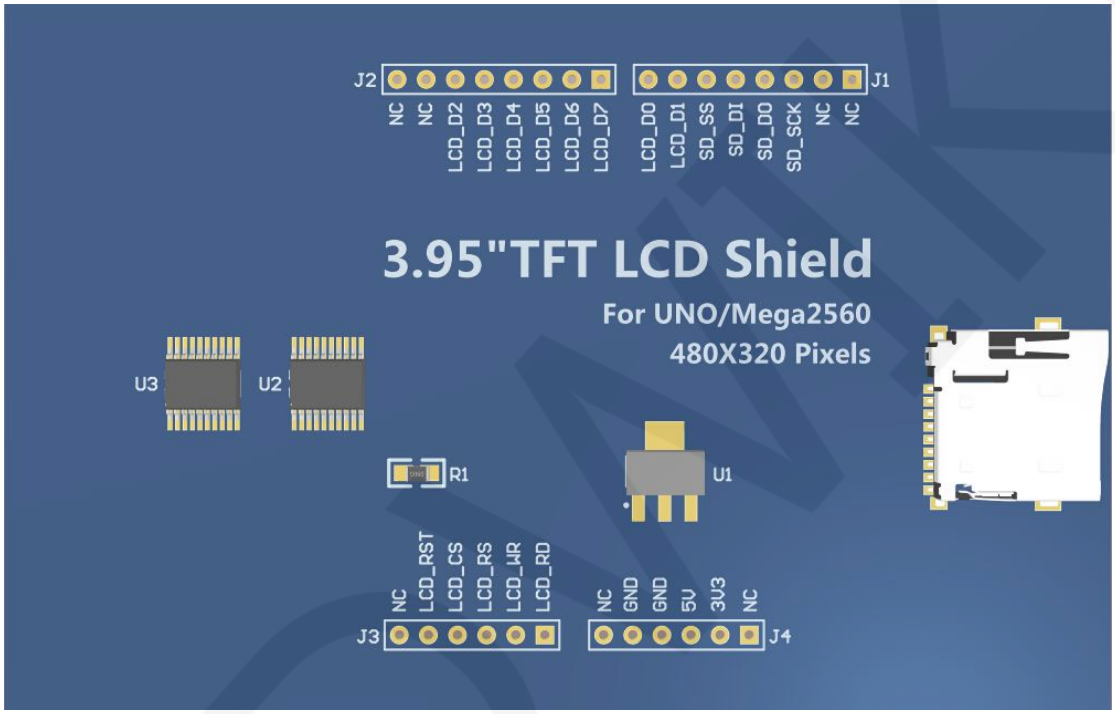
Test platform introduction:

Development board: STC89/STC12 development board

MCU : STC12C5A60S2

Crystal frequency : 12MHZ

Wiring instructions:



Picture1. Pin silk screen picture

Note:

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

Important Note:

1. **The following pin numbers 1~20 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 13 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.**

STC12C5A60S2 microcontroller test program wiring instructions			
Number	**Module Pin**	**Corresponding to STC12 development board wiring pin**	**Remarks**
1	**5V**	5V	Power positive 5V pin
2	**3V3**	3V3	Power positive 3.3V pin
3	**GND**	GND	Power ground pin
4	**LCD_D0**	P00	8-bit data bus pin
5	**LCD_D1**	P01	
6	**LCD_D2**	P02	
7	**LCD_D3**	P03	
8	**LCD_D4**	P04	
9	**LCD_D5**	P05	
10	**LCD_D6**	P06	
11	**LCD_D7**	P07	
12	**LCD_RST**	P33	LCD reset control pin
13	**LCD_CS**	P13	LCD chip select control pin
14	**LCD_RS**	P12	LCD register / data selection control pin
15	**LCD_WR**	P11	LCD write control pin

16	LCD_RD	P10	LCD read control pin
17	SD_SS	No need to connect	Extended function: SD card selection control pin
18	SD_DI	No need to connect	Extended function: SD card input pin
19	SD_DO	No need to connect	Extended function: SD card output pin
20	SD_SCK	No need to connect	Extended function: SD card clock control pin

Demo function description:

1. This module needs GPIO strong push-pull output to work normally, so this set of test program can only be used for C51 microcontroller with push-pull output function, so it is suitable for STC12C5A60S2 platform;
2. Please follow the wiring instructions above to find the corresponding development board for wiring;
3. This set of test program supports 8-bit and 16-bit data bus mode switching, but the product module can only use 8-bit data bus mode. For the specific switching method, see the following mode switching instructions;
4. This set of test program supports display switching in four directions. For details, see the following instructions for switching directions;
5. STC12C5A60S2 microcontroller test program contains the following test items:
   A. the main interface displays the test;
   B. read ID and color value test;
   C. simple brush test;
   D. rectangular drawing and filling test;
   E. circular drawing and filling test;
   F. triangle drawing and filling test;
   G. English display test;
   H. Chinese display test;
   I. picture display test;

J. rotating display 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 can only use 8-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. **If the software has done 8/16 bit switching, the hardware needs to be changed to the corresponding mode to be able to drive normally. The module hardware does not support 8/16-bit switching. For details, please refer to the module schematic. Please consult us 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