C51 Test platform introduction:
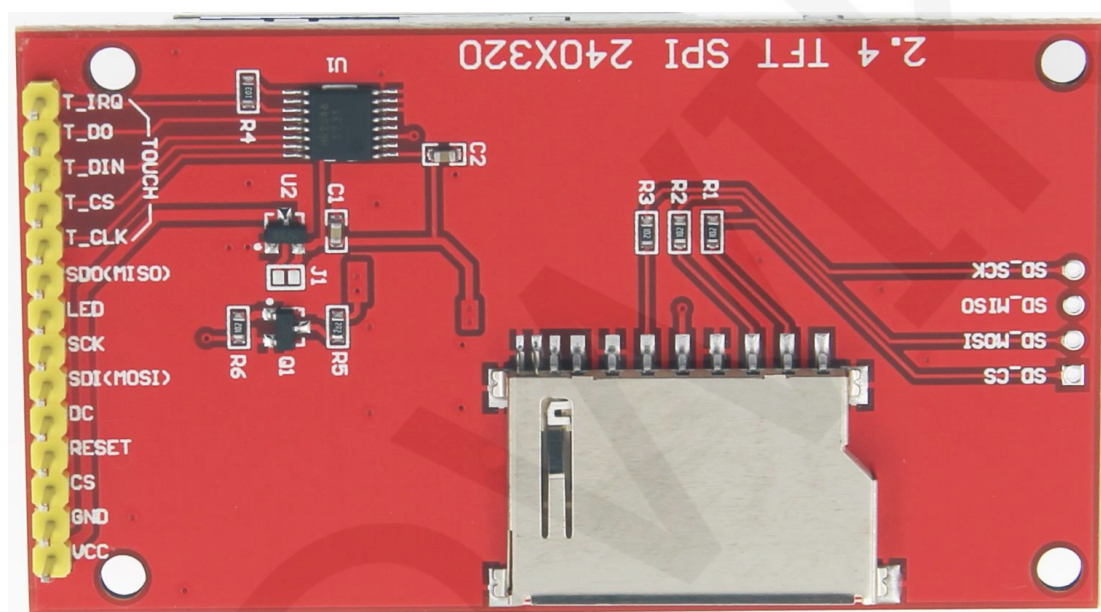
Development board: STC89/STC12 development board

MCU ： STC89C52RC、STC12C5A60S2

Crystal frequency : 12MHZ

Wiring instructions:

The wiring pins of STC89C52RC and STC12C5A60S2 are identical, as follows:

Pin silkscreen picture

STC89C52RC and STC12C5A60S2 microcontroller test program wiring instructions			
Number	**Module Pin**	**Corresponding to STC89/STC12 development board wiring pin**	**Remarks**
1	**VCC**	5V/3.3V	LCD power supply is positive (3.3V~5V)
2	**GND**	GND	LCD Power ground
3	**CS**	P13	LCD selection control signal

4	**RESET**	P33	LCD reset control signal
5	**DC/RS**	P12	LCD register / data selection control signal
6	**SDI(MOSI)**	P15	LCD SPI bus write data signal
7	**SCK**	P17	LCD SPI bus clock signal
8	**LED**	P32	LCD backlight control signal (high level lighting, if you do not need control or use STC89C52RC, please connect 3.3V)
9	**SDO(MISO)**	P16	LCD SPI bus read data signal (can not be connected if not needed)
10	**T_CLK**	P36	Touch screen SPI bus clock signal (STC89C52RC does not need to be connected)
11	**T_CS**	P37	Touch screen chip select control signal (STC89C52RC does not need to be connected)
12	**T_DIN**	P34	Touch screen SPI bus write data signal (STC89C52RC does not need to be connected)
13	**T_DO**	P35	Touch screen SPI bus read data signal (STC89C52RC does not need to be connected)
14	**T_IRQ**	P40	Touch screen touch interrupt detection signal (STC89C52RC does not need to be connected)

Note: If you use the hardware SPI function of STC12C5A60S2, the pins of the LCD screen need an external level conversion module (5V to 3.3V) for normal operation.

Demo function description:

1. This set of test program procedures is applicable to the STC89C52RC and STC12C5A60S2 platforms;

2. This set of test program uses the software SPI and hardware SPI function of the

single-chip platform (STC89C52RC only software SPI function);

3. When using the software SPI function or the hardware SPI function, the wiring pin definition is the same, but the initialization is different;

4. Please follow the above wiring instructions to find the corresponding development board and MCU for wiring;

5. STC89C52RC microcontroller RAM is only 25KB, so only a simple brush test, other test items can not be tested;

6. This set of tests supports display switching in four directions. For details, see the display direction switching instructions.

7. 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 screen handwriting test

8. If the module does not have touch or does not require touch function, please remove the touch screen handwriting test item;

9. If you want to perform touch calibration, you need to remove the touch screen handwriting test item, then add the touch calibration program and run it. See the user manual for details;

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