

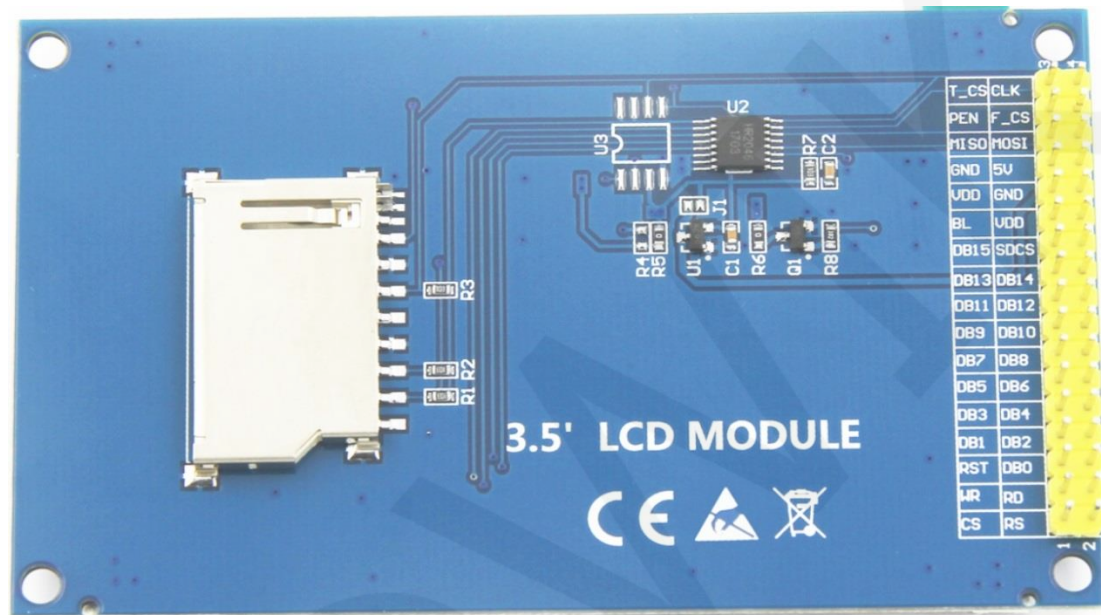
C51 Test platform introduction:

Development board: STC89/STC12 development board

MCU : STC89C52RC /STC12C5A60S2

Crystal frequency : 12MHZ

Wiring instructions:



Picture1. Module Pin silk screen picture

Important Note:

1. The following pin numbers 1~34 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: CS is 1 pin on our module. It may be x pin on different size bare screen. The following wiring program instructions tell you to connect 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 or 3.3V (module has integrated ultra low dropout 5V to 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 integrated triode backlight control circuit, which only needs to input the high level of the BL pin or the PWM wave to illuminate the backlight. If you are buying a bare screen, the LEDAx 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	CS	P13	LCD reset control pin(low level enable)
2	RS	P12	LCD register / data selection control pin (high level: register, low level: data)
3	WR	P11	LCD write control pin
4	RD	P10	LCD read control pin
5	RST	P33	LCD reset control pin(low level reset)
6	DB0	P00	LCD data bus low 8-bit pin
7	DB1	P01	
8	DB2	P02	
9	DB3	P03	
10	DB4	P04	
11	DB5	P05	
12	DB6	P06	
13	DB7	P07	
14	DB8	P20	LCD data bus high 8-bit pin
15	DB9	P21	
16	DB10	P22	
17	DB11	P23	
18	DB12	P24	
19	DB13	P25	
20	DB14	P26	
21	DB15	P27	

22	SDCS	No need to connect	SD card selection control pin (used when using the SD card expansion function, this test program is not used)
23	BL	P32	LCD backlight control pin(High level light)
24	VDD	3.3V/5V	Module power positive pin (module has integrated voltage regulator IC, so the power supply can be connected to 5V or 3.3V)
25	VDD	3.3V/5V	
26	GND	GND	Module power ground pin
27	GND	GND	
28	5V	No need to connect	LCD backlight power positive pin (default shared onboard backlight power supply, this pin can not be connected)
29	MISO	P35	Touch screen SPI bus data input pin
30	MOSI	P34	Touch screen SPI bus data output pin
31	PEN	P40	Touch screen interrupt detection pin (Low level when a touch occurs)
32	F_CS	No need to connect	Flash chip select control pin (used when using the Flash extension function, this test program is not used)
33	T_CS	P37	Touch screen IC chip select control pin(Low level enable)
34	CLK	P36	Touch screen SPI bus clock control pin

STC89C52RC microcontroller test program wiring instructions

Number	Module Pin	Corresponding to STC89 development board wiring pin	Remarks
1	CS	P13	LCD reset control pin(low level enable)
2	RS	P12	LCD register / data selection control pin (high level: register, low level: data)
3	WR	P11	LCD write control pin
4	RD	P10	LCD read control pin
5	RST	P14	LCD reset control pin(low level reset)
6	DB0	P30	LCD data bus low 8-bit pin
7	DB1	P31	
8	DB2	P32	

9	DB3	P33	
10	DB4	P34	
11	DB5	P35	
12	DB6	P36	
13	DB7	P37	
14	DB8	P20	LCD data bus high 8-bit pin
15	DB9	P21	
16	DB10	P22	
17	DB11	P23	
18	DB12	P24	
19	DB13	P25	
20	DB14	P26	
21	DB15	P27	
22	SDCS	No need to connect	SD card selection control pin (used when using the SD card expansion function, this test program is not used)
23	BL	3.3V	LCD backlight control pin(High level light)
24	VDD	3.3V/5V	Module power positive pin (module has integrated voltage regulator IC, so the power supply can be connected to 5V or 3.3V)
25	VDD	3.3V/5V	
26	GND	GND	Module power ground pin
27	GND	GND	
28	5V	No need to connect	LCD backlight power positive pin (default shared onboard backlight power supply, this pin can not be connected)
29	MISO	No need to connect	Touch screen SPI bus data input pin
30	MOSI	No need to connect	Touch screen SPI bus data output pin
31	PEN	No need to connect	Touch screen interrupt detection pin (Low level when a touch occurs)
32	F_CS	No need to connect	Flash chip select control pin (used when using the Flash extension function, this test program is not used)
33	T_CS	No need to connect	Touch screen IC chip select control pin(Low level enable)
34	CLK	No need to connect	Touch screen SPI bus clock control pin

Note:

1. Since the STC89C52RC microcontroller does not have a push-pull output function, the backlight control pin needs to be connected to a 3.3V power supply to be properly lit.
2. Since the STC89C52RC microcontroller's Flash capacity is too small (less than 25KB), the program with touch function cannot be downloaded, so the touch screen does not need wiring.

Demo function description:

1. This set of test procedures are applicable to the STC12C5A60S2 and STC89C5SRC microcontroller platforms respectively;
2. Please find the corresponding development board for wiring according to the above wiring instructions;
3. This set of test program supports 8-bit mode and 16-bit data bus mode switching. For details, 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. STC89C5SRC microcontroller Flash capacity is too small (less than 25KB), can not download too large programs, so its test program only contains simple red, green and blue screen test items;
6. 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;
- K. touch screen handwriting test;

Mode switching instructions:

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

```
#define LCD_USE8BIT_MODEL 0 //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 set of test programs uses the 16-bit data bus mode by default;
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. The module hardware does not support 8/16 bit mode switching, Please refer to the module schematic for specific instructions. 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 //Clockwise 0° Rotate`

`USE_HORIZONTAL 1 //Clockwise 90° Rotate`

`USE_HORIZONTAL 2 //Clockwise 180° Rotate`

`USE_HORIZONTAL 3 //Clockwise 270° Rotate`