Test platform introduction:

Development board: MiniSTM32, Elite STM32, Explorer STM32F4, Apollo STM32F4/F7

MCU: STM32F103RCT6, STM32F103ZET6, STM32F407ZGT6, STM32F429IGT6 STM32F767IGT6, STM32H743IIT6

Main frequency: 72MHz, 72MHz, 168MHz, 180MHz, 216MHz, 400MHz (Corresponding to the above MCU)

Crystal frequency: 8MHz, 8MHz, 8MHz, 25MHz, 25MHz, 25MHz (Corresponding to the above MCU)

Wiring instructions:



Picture1. Pin silkscreen picture

important:

- 1. The following pin numbers 1~8 refer to the module pin numbers of our company with PCB backplane. If you are buying 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 according to the following. The module pin number is used for wiring. For example: DC is 6 feet on our module. It may be x pin on different size bare screen. The following wiring instructions tell you that the DC signal is connected to the PB10 pin of the MCU. of.
- 2. About VCC supply voltage: The IPS display module can be connected to 3.3V or 5V.
- 3. About backlight voltage: The module with PCB backplane has integrated triode backlight control circuit, only need to input high level or PWM wave on BL pin to backlight. If you are buying a bare screen, the LEDAx is connected to 3.0V-3.3V, and the LEDKx can be grounded.

STM32F103C8T6 microcontroller test program wiring instructions

Number	Module Pin	Corresponding to STM32F103C8T6 development board wiring pin	Remarks
1	GND	GND	LCD Power ground
2	VCC	3.3V/5V	LCD power supply is positive
3	SCL	PA5	LCD SPI bus clock signal
4	SDA	PA7	LCD SPI bus write data signal
5	RES	PB8	LCD reset control signal(Low level reset, The module has a reset circuit, and this pin can not be connected)

	DC	PB7	LCD register / data selection control
6			signal(Low level: register, high
			level: data)
7	CS	PB9	LCD chip select control signal (low
			level enable)
8	BLK	PB6	LCD backlight control signal (high
			level lighting, if you do not need
			control, please connect 3.3V)

STM32F103RCT6 microcontroller test program wiring instructions

Number	Module Pin	Corresponding to MiniSTM32 development board wiring pin	Remarks
1	GND	GND	LCD Power ground
2	VCC	3.3V/5V	LCD power supply is positive
3	SCL	PB13	LCD SPI bus clock signal
4	SDA	PB15	LCD SPI bus write data signal
5	RES	PB12	LCD reset control signal(Low level reset, The module has a reset circuit, and this pin can not be connected)
6	DC	PB10	LCD register / data selection control signal(Low level: register, high level: data)
7	CS	PB11	LCD chip select control signal (low level enable)
8	BLK	PB9	LCD backlight control signal (high level lighting, if you do not need control, please connect 3.3V)

STM32F103ZET6 microcontroller test program wiring instructions

		Corresponding to Elite	
Number	Module Pin	STM32 development	Remarks
		board wiring pin	

1	GND	GND	LCD Power ground
2	vcc	3.3V/5V	LCD power supply is positive
3	SCL	PB13	LCD SPI bus clock signal
4	SDA	PB15	LCD SPI bus write data signal
5	RES	PB12	LCD reset control signal(Low level reset, The module has a reset circuit, and this pin can not be connected)
6	DC	PB10	LCD register / data selection control signal(Low level: register, high level: data)
7	CS	PB11	LCD chip select control signal (low level enable)
8	BLK	PB9	LCD backlight control signal (high level lighting, if you do not need control, please connect 3.3V)

STM32F407ZGT6 microcontroller test program wiring instructions **Corresponding to Explorer STM32F4** Number | Module Pin Remarks development board wiring pin GND **GND** LCD Power ground 1 2 VCC 3.3V/5V LCD power supply is positive LCD SPI bus clock signal 3 SCL PB3 4 SDA PB5 LCD SPI bus write data signal LCD reset control signal(Low level reset, The module has a reset 5 RES PB12 circuit, and this pin can not be connected) LCD register / data selection control 6 DC **PB14** signal(Low level: register, high level: data) LCD chip select control signal (low 7 **CS** PB15 level enable)

8	BLK	PB13	LCD backlight control signal (high level lighting, if you do not need
			control, please connect 3.3V)

STM32F429IGT6 microcontroller test program wiring instructions			
Number	Module Pin	Corresponding to Apollo STM32F4/F7 development board wiring pin	Remarks
1	GND	GND	LCD Power ground
2	vcc	3.3V/5V	LCD power supply is positive
3	SCL	PF7	LCD SPI bus clock signal
4	SDA	PF9	LCD SPI bus write data signal
5	RES	PD12	LCD reset control signal(Low level reset, The module has a reset circuit, and this pin can not be connected)
6	DC	PD5	LCD register / data selection control signal(Low level: register, high level: data)
7	CS	PD11	LCD chip select control signal (low level enable)
8	BLK	PD6	LCD backlight control signal (high level lighting, if you do not need control, please connect 3.3V)

STM32F767IGT6 and STM32H743IIT6 microcontroller test program wiring instructions **Corresponding to Apollo** Number Module Pin STM32F4/F7 development Remarks board wiring pin 1 GND **GND** LCD Power ground VCC LCD power supply is positive 3.3V/5V LCD SPI bus clock signal 3 SCL PB13

4	SDA	PB15	LCD SPI bus write data signal
5	RES	PD12	LCD reset control signal(Low level reset, The module has a reset circuit, and this pin can not be connected)
6	DC	PD5	LCD register / data selection control signal(Low level: register, high level: data)
7	CS	PD11	LCD chip select control signal (low level enable)
8	BLK	PD6	LCD backlight control signal (high level lighting, if you do not need control, please connect 3.3V)

Demo function description:

- This test program contains seven test procedures for STM32 MCU, namely: STM32F103C8T6, STM32F103RCT6, STM32F103ZET6, STM32F407ZGT6, STM32F429IGT6, STM32F767IGT6, STM32H743IIT6;
- 2. This module uses 4-line-SPI communication interface;
- 3. This test program includes two functional tests: software SPI and hardware SPI;
- Please follow the above wiring instructions to find the corresponding development board and MCU for wiring;
- This set of tests supports display switching in four directions. For details, see the display direction switching instructions.
- 6. This set of test procedures contains the following test items:
 - A. the main interface display test
 - B. 3D menu display 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;

Display direction switching instructions:

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

#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 2 //180° Rotate

USE_HORIZONTAL 1 //90° Rotate

USE_HORIZONTAL 3 //270° Rotate