

2.8inch Resistive Touch LCD

This is a multicolor graphic IPS LCD display, 2.8inch diagonal, 320×240 pixels, with resistive touch screen.

Feature

- Onboard touch controller, smoother touch experience than solutions that directly use AD pins for touching
- SPI interface, requires a few pins
- Programmable backlight control, power saving
- Comes with development resources and manual (examples for STM32/AVR/PIC)

Specification

Display Controller	HX8347D
Touch Controller	XPT2046
LCD Type	IPS
Interface	SPI
Resolution	320*240
Dimension	79.9mm x50.8mm
Display area	57.6mm x 43.2mm
Display colors	RGB, 65K colors
Touch Type	4-wire resistive
Power supply	5V
Logic level	3.3V

Interface

5V	5V
GND	Ground
MISO	Data output of SPI interface (slaver)
MOSI	Data input of SPI interface (slaver)
SCLK	Clock pin of SPI interface
LCD_CS	Chip select pin of LCD
LCD_DC	Data/Command selection
LCD_RST	LCD Reset
LCD_BL	Backlight control
TP_CS	Chip select pin of Touch
TP_IRQ	Interrupt pin of Touch

User Guide

There are several examples provides, demo codes can be downloaded from [#Demo codes](#)

OpenX05R-C

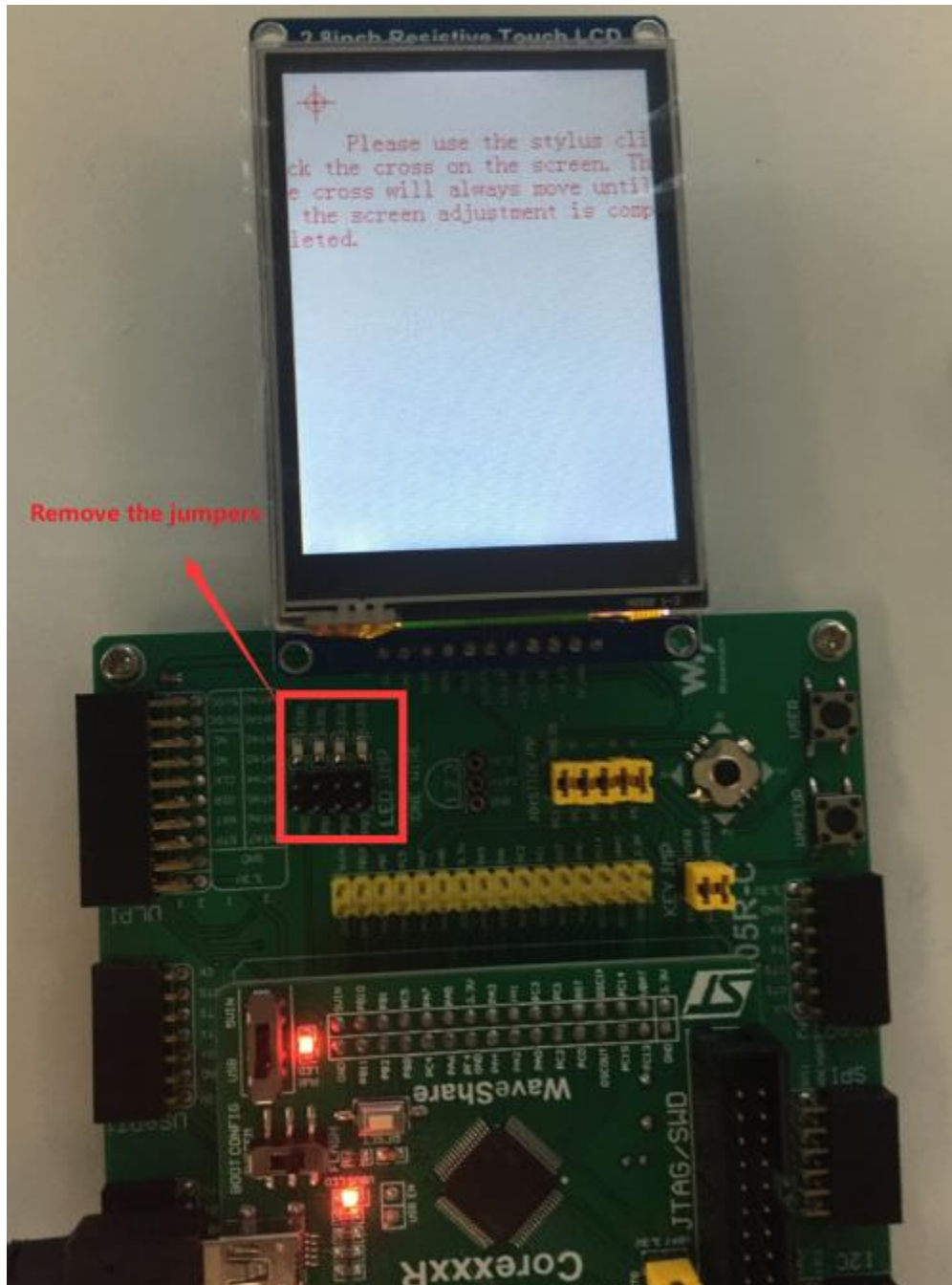
This example is based on Waveshare [Open405R-C](#).

- Remove four LED jumpers, then insert the 2.8inch LCD to Open405R-C
- Open the TouchPanel project, which is under the Open405R-C directory. Compile and download it to the development board
- After downloading, press reset button of the OpenX05-C board, you can see that prompt information are printed on LCD:

Please use the stylus click the cross on the screen. The cross will always move until the screen adjustment is completed.

- You need to calibrate the touchscreen by touch pen following the prompt.
- After calibrating, now you can try to draw on the touchscreen.

For more details, you can refer to the codes



OpenM128

This example is based on Waveshare [OpenM128](#)

- Connect the LCD to OpenM128 according to figures below:

2.8inch Resistive Touch LCD OpenM128	
5V	5V
GND	GND
MISO	PB2/DIN
MOSI	PB3/DOOUT
SCLK	PB1/CLK
LCD_CS	PD6/CS
LCD_DC	PB5/RS
LCD_RST	PB6/RESET
LCD_BL	PE5/PWM
TP_CS	PB4
TP_IRQ	PE4/IRQ

- Connect ISP prorammer to OpenM128 board and power on it.
- Open project nu Atmel Studio 7.0 software
- Compile and flash code to OpenM128

LCD28 - AtmelStudio

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main.c hx8347d.c

main int main(void)

```
/*
 * LCD28_Touch.c
 *
 * Created: 2019/5/13 11:40:16
 * Author :
 */

#include <avr/io.h>
#include "SPI0.h"
#include "hx8347d.h"
#include "LCD_lib.h"
#include <util/delay.h>

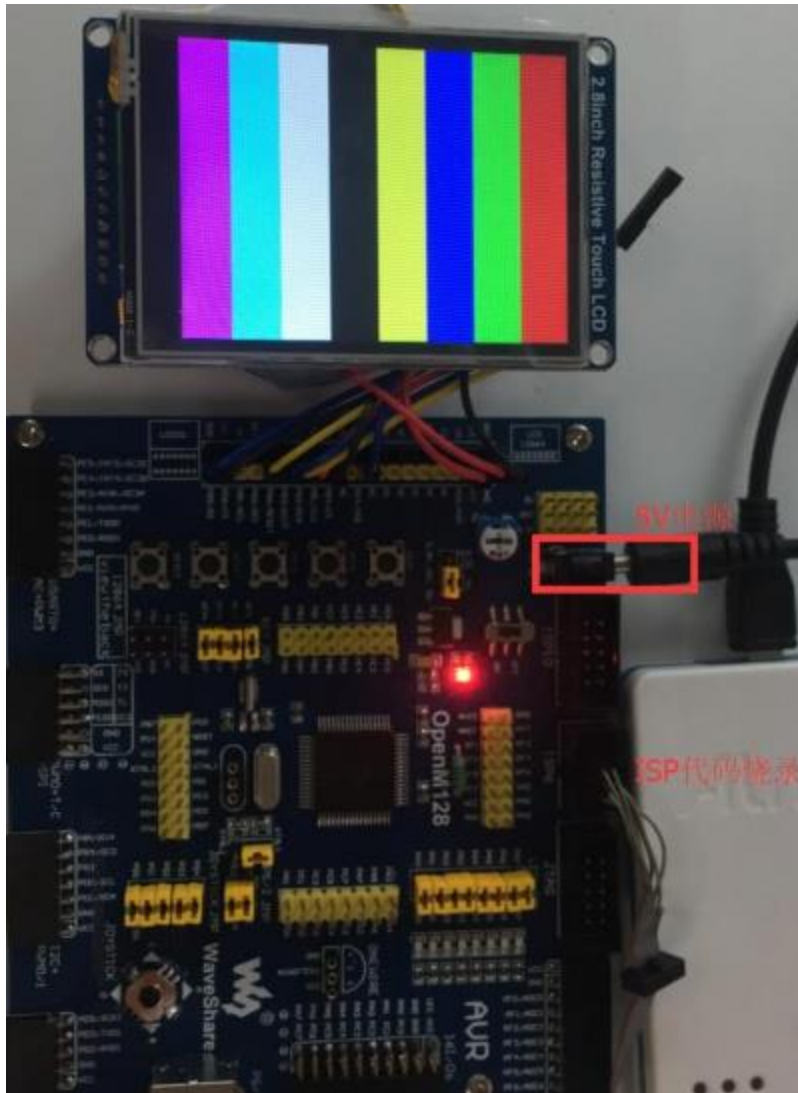
int main(void)
{
    /* Replace with your application code */
    DDRA=0XFF;
    PORTA=0X00;
    DDRD=0X40;

    lcd_init();
    _delay_ms(10);
    lcd_display_test();

    while(1);
}
```

Flash

Compile



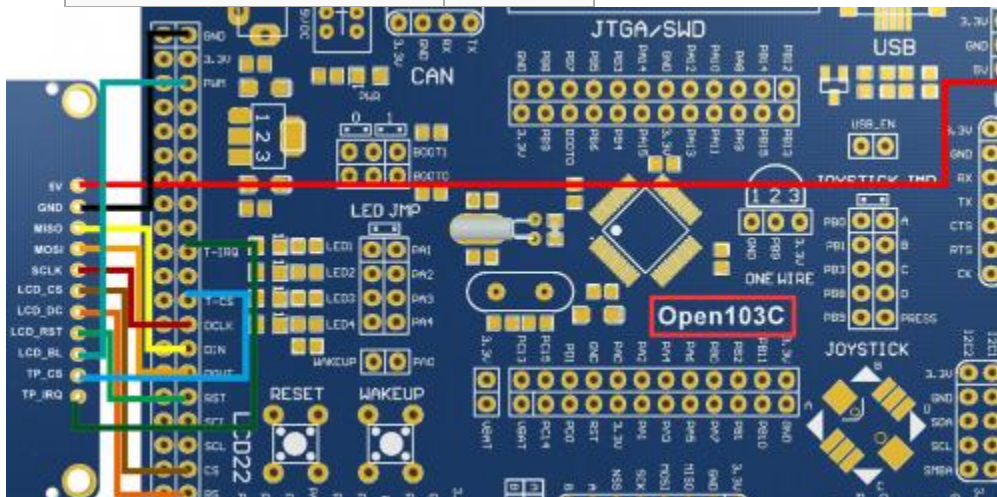
Open103C

This example is based on Waveshare [Open103C](#)

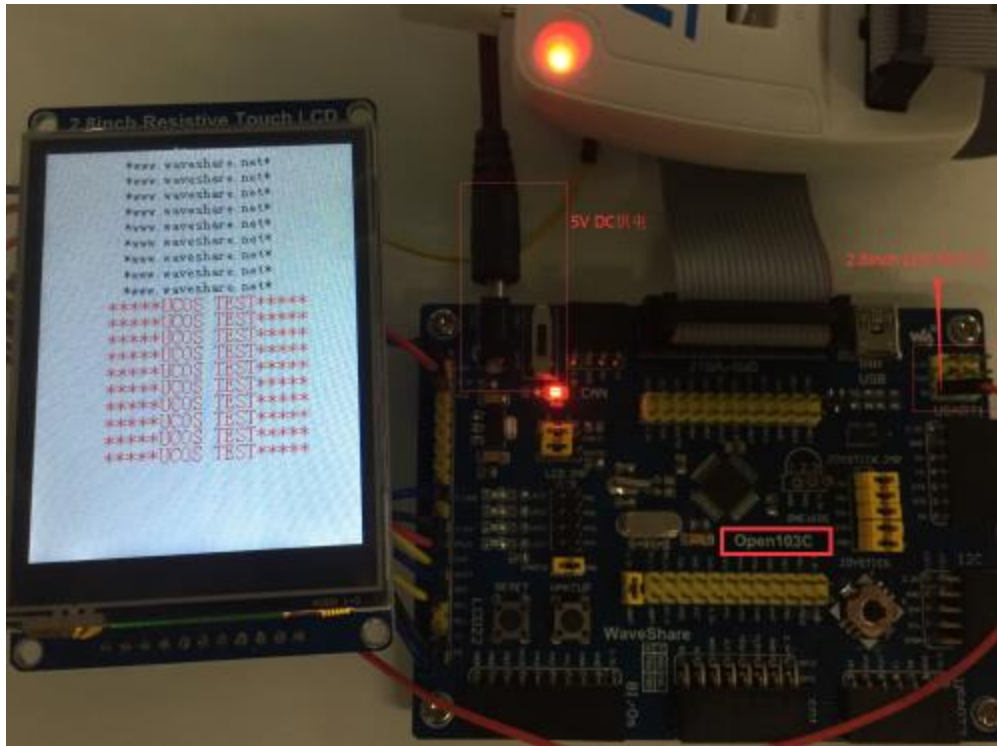
- Connect LCD to Open103C according to figures below

2.8inch Resistive Touch LCD	Open103C
5V	5V
GND	GND
MISO	PB14
MOSI	PB15

SCLK	PB13
LCD_CS	PB12
LCD_DC	PB8
LCD_RST	PB9
LCD_BL	PB0
TP_CS	PA15
TP_IRQ	PB1



- Connect ST-Link programmer to Open103C and power on it
- Open project, compile and flash codes to Open103C



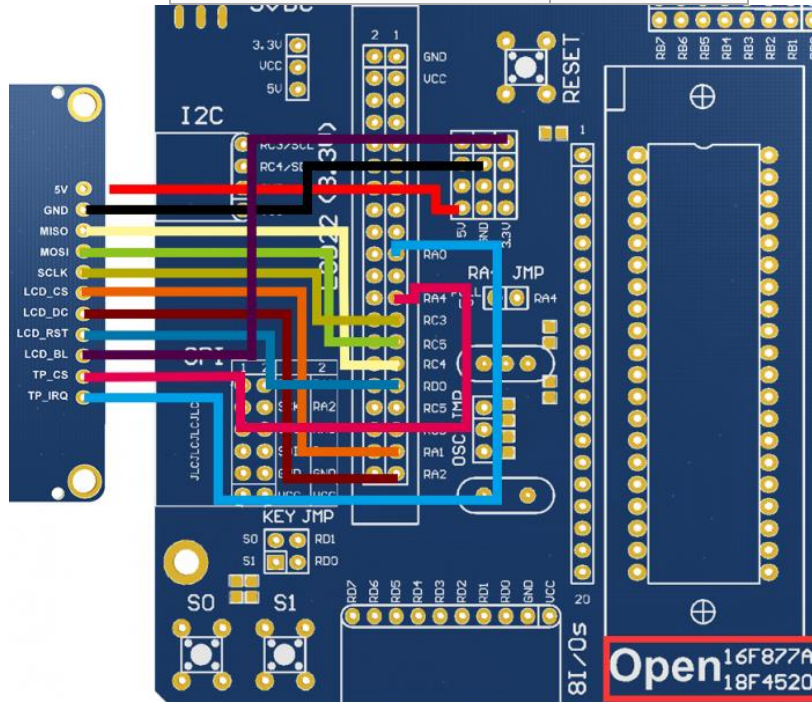
Open16F877A/Open18F4520

This example is based on Waveshare Open16F877A/Open18F4520

- Connect the LCD to Open16F877A/Open18F4520 according to figures below

2.8inch Resistive Touch LCD	Open16F877A
5V	5V
GND	GND
MISO	RC4
MOSI	RC5
SCLK	RC3
LCD_CS	RA1
LCD_DC	RA2

LCD_RST	RD0
LCD_BL	3.3V
TP_CS	RA4
TP_IRQ	RA0



Resource

Documents

- [Schametic](#)
- [Datasheet of 74VHC125](#)
- [Datasheet of XPT2046](#)
- [Datasheet of HX8347](#)

Demo codes

- [Demo codes](#)