2.8inch TFT Touch Shield

Resources

- [Schematic](#)
- [Source code](#)

Datasheets

- [HX8347](#)
- [XPT2046](#)
- [74VHC125](#)
- [ST7789V](#)
- [Sn74hc245](#)

- Resistive touch screen TFT LCD, 2.8inch, 320x240 resolution
- Standard Arduino interface, compatible with development boards like : Arduino UNO, Leonardo, UNO PLUS, NUCLEO, XNUCLEO
- Onboard stand-alone touch controller, better touching than solutions that use AD pins directly for touch control
- Micro SD slot, provides an easy way to store photos for displaying
- Controlled via SPI, only a few Arduino pins are used
- Backlight adjustable by program, lower power consumption

Interfaces

Symbol	Descriptions
SCLK	SPI clock
MISO	SPI Master In Slave Out
MOSI	SPI Master Out Slave In
LCD_CS	LCD chip select signal
LCD_BL	LCD back light control signal

LCD_DC	LCD digital command signal
SD_CS	SD chip select signal
TP_CS	XPT2046 chip select signal
TP_IRQ	XPT2046 interrupt output signal
5V	5V power supply
GND	Ground

Hardware configuration

- When using the Arduino board with ICSP interface, the jumpers SB1, SB2 and SB3 on the LCD module should be kept open.
- When using the Arduino board without ICSP interface, the jumpers SB1, SB2 and SB3 on the module should be connected with a 0R resistor, respectively.

Demos

In this section, we will illustrate the applications of this LCD module by using the Arduino UNO and XNUCLEO-F103RB development boards.

Arduino Demo

1. Copy the library under the path of Arduino\lib in the File:2.8inch TFT Touch Shield code.7z to the Arduino board in the directory of Arduino\libraries.
2. Before performing the ShowImage test, you should copy the image in the file folder PICTURE of the File:2.8inch TFT Touch Shield code.7z to the root directory of SD card.
3. Open the project in the directory of Arduino\ShowBMP with Arduino IDE, to download the program to the Arduino board. When finished, you will see a picture displayed on the screen.
4. Before testing the touch screen, you should calibrate the touch screen according to the prompt displayed on the screen. Open the project in the directory of Arduino\TouchPanel, to download the program to the Arduino board. Then, you can perform the operations, it will prompt:

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

5. Click the cross on the screen. The cross will always move until the screen adjustment is completed.
6. Click the CLEAR mark on the top right to clear the screen.

STM32 Demo

1. Before performing the ShowImage test, you should copy the images in the file folder PICTURE of the [File:2.8inch TFT Touch Shield code.7z](#) to the root directory of SD card.
2. Open the project in the directory of STM32\...\ShowImage with KEIL, to download the program to the Nucleo or Xnucleo series board. When finished, you will see four pictures displayed in turn on the screen.
3. Before testing the touch screen, you should calibrate the touch screen according to the prompt displayed on the screen. When finished, open the project in the directory of STM32\...\TouchPanel, to download the program to the Nucleo or Xnucleo series board. Then, you can perform the operations, it will prompt:

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

4. Click the cross on the screen. The cross will always move until the screen adjustment is completed.
5. Click the CLEAR mark on the top right to clear the screen.

- Notes: The image displayed should be in the format of 24bit bmp with 240*320 resolutions. SD card format: FAT