3.2inch TFT Touch Shield User Manual

OVERVIRE

This is a 3.2inch resistive screen TFT LCD, 320x240 resolution, integrate controller on board. It uses SPI interface, can be used to display image, text or draw geometric figure with functions.

STM32 and Arduino examples are provided for users.

PARAMETERS

LCD Type: TFT

LCD Interface: SPI

LCD Controller: ILI9341

Touch Screen Controller: XPT2046

Touch Screen Type: Resistive

Resolution: 320x240 (Pixel)

Color Gradation Exponent: 65536

INTERFACE

Symbol	Arduino PIN	STM32 PIN	Description
5V	5V	5V	5V power input
GND	GND	GND	Ground
SCLK	D13	PA5	SPI clock
MISO	D12	PA6	SPI data input
MOSI	D11	PA7	SPI data output
LCD_CS	D10	PB6	LCD chip select
LCD_BL	D9	PC7	LCD back light
LCD_RST	D8	PA9	LCD reset
LCD_DC	D7	PA8	LCD data/command selection

TP_BUSY	D6	PB10	Touch panel busy
SD_CS	D5	PB4	Micro SD card chip select
TP_CS	D4	PB5	Touch panel chip select
TP_IRQ	D3	PB3	Touch panel interrupt

HOW TO USE

HARDWARE CONFIGURATION

- If there is ICSP interface on Arduino board, set the SPI Config switch to ICSP position. (default)
- If Arduino board has no ICSP interface, set the SPI Config switch to the position that SCLK\D13, MISO\D12, MOSI\D11

EXAMPLES

We provide Arduino UNO examples and XNUCLEO-F103RB examples for this screen.

ARDUINO EXAMPLES

1. Download the examples: 3.2inch TFT Touch Shield code.7z, and copy the libraries which are in Arduino\lib folder of examples to the libraries folder which is under the installation directory of Arduino.
2. Before running the LCD_ShowBMP code, copy the pictures which is in the PIC folder to SD card.
3. Open the LCD_ShowBMP project with Arduino IDE, download to Arduino board.
4. The Touch code use four sets of calibration values, could support painting operation in four directions. There are five colors which could be chosen on the right. The size of paintbrush is 9 by default. Users can also click the AD on screen to calibrate:
Please use the stylus click the cross on the screen. The cross will always move until the screen adjustment is completed.
5. According to the prompt, click the red "+" one by one to finish the calibration.

STM32 EXAMPLES

1. Before running the code that display image. copy the pictures which is in the PIC folder to SD card. Then insert the LCD to NUCLEO or XNUCLEO board.
2. Open the project with MDK, download to the NUCLEO or XNUCLEO development board.

3. The LCD will first show some general functions: Draw dots, draw dotted line and full line, rectangle, filled rectangle, circle and filled circle. Every figure keeps for 3s. You can change the size of dot, the width of lines and the size of the circles.

4. The Touch code use four sets of calibration values, could support painting operation in four directions. There are five colors which could be chosen on the right. The size of paintbrush is 9 by default. Users can also click the AD on screen to calibrate:
Please use the stylus click the cross on the screen. The cross will always move until the screen adjustment is completed.

5. According to the prompt, click the red "+" one by one to finish the calibration.

Note:

Image: 320x240, 24bit, bmp.

SD card: FAT