3.2” inch Arduino LCD Shield User Guide

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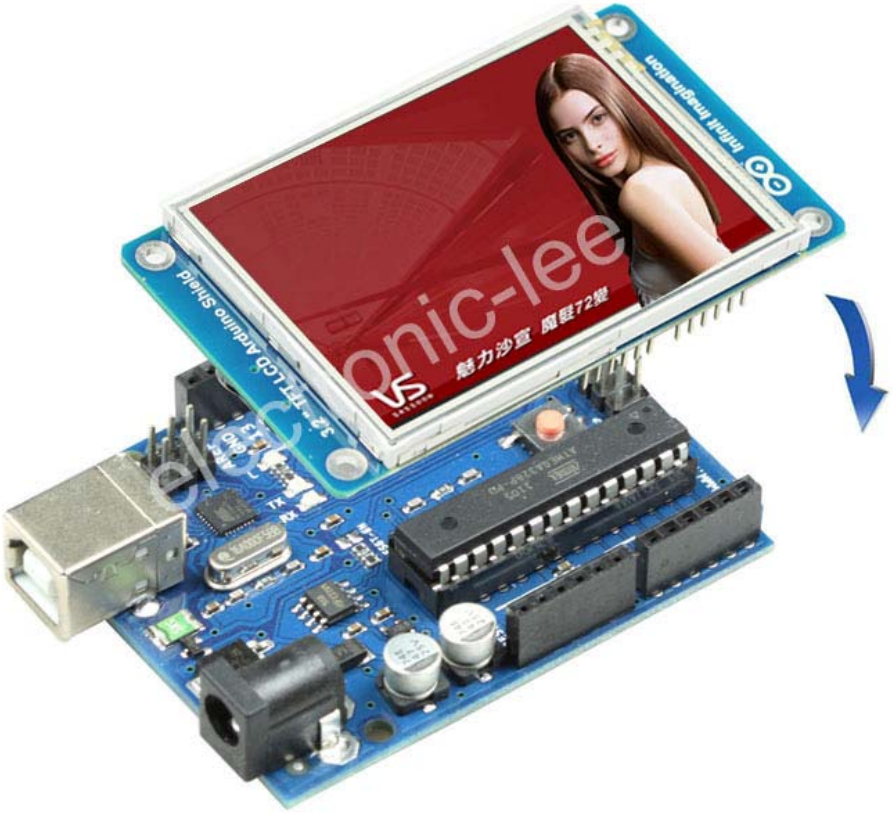

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1 Introduction

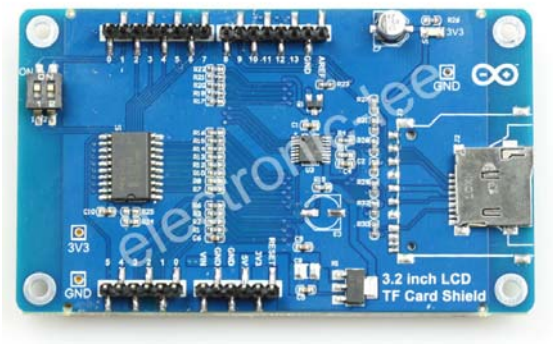
The idea of develop the LCD shield for Arudino is that the LCD is so widely used in mobile phones, handsets, and portable devices, but there is no such thing for Arduino. Although there are many different LCD module out there from 1.8” ~ 7” with 8bit or 16bit data bus, they are not easy to use and you have to make your own adapter board or flying wire between Arduino boards and LCD module. We choose the most popular 3.2 inch LCD screen for our LCD shield because it has big screen and touch panel which eliminate additional keypad and can be operated on one hand. Another good news is that Henning Karlsen developed a open source LCD graphic library ITDB for Arduino, we port his library to our LCD shield with little modifications which is really cool. Have fun with our LCD shield with your infinite imagination.

2 Features

- 3.2” inch big LCD screen
- Resistive touch panel
- TF card reader support
- Well mate with Arduino UNO and Mega2560 board
- ITBD open source graphic library support

3 Specifications

- 3.2” inch TFT LCD screen
- Resolution 320 x 240, RGB565 format
- 8 bit LCD data bus
- TF card read support
- LCD controller SSD1289
- Touch panel controller ADS7843



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4 Pin Definition

LCD Shield Pins	Arduino UNO Pins	Arduino Mega2560 Pins	Description
0~7	0~7 (PD0~PD7)	0~7 (PE0,PE1,PE4,PE5,PG5,PE3,PH3,PH4)	Data Bus[0:7]
9	9	9	TF_CS
10	10	10	Touch_Select (TCS)
11	11	11	MOSI (DIN)
12	12	12	MISO (DOUT)
13	13	13	Touch_CLK (TCLK)
A0	A0	A0	Chipselect (CS)
A1	A1	A1	Data/Command_Select D/C(RS)
A2	A2	A2	Write (WR)
A3	A3	A3	Reset (RST)
A4	A4	A4	Touch_IRQ (IRQ)
A5	A5	A5	Latch signal (ALE)

Note: Touch screen controller and TF card reader share the same hardware SPI port (Pin11,Pin12,Pin13), they are activated by different chip select signals(Touch screen use Pin10, while TF reader use Pin9).

5 Fimware library

We use ITDB LCD graphic library written Henning Karlsen from http://www.henningkarlsen.com/electronics with little modification. Please download the modified firmware library package from http://www.bestelecs.com/download/arduinolcd/32lcd.zip.

After downloading, decompress the zip file and copy the ITDB02_Graph16 and ITDB02_Touch folders into arduino-1.0\libraries directory. Open the file with ino extension on each example folder, and upload the code into your Arduino board then have fun. The ITDB02_Graph16 demonstrate various graphic functions, and the ITDB02_Touch demonstrate the touch panel functions.

The TF/SD card reader example is located on Arduino software libraries/SD/examples directory.

6 FAQs

Q1: What is 2 way DIP switch on the back of the shield?

A1: The 0~7 pins is used as LCD data bus, whereas the pin0 and pin1 is UART port which is used by the bootloader when uploading the code. The DIP switcher switch ON/OFF the pin0 and pin1 from the LCD data bus, if it conflicts when uploading the code please switch it OFF.

Q2: Why the LCD data bus is 8bit while the LCD controller is 16bit data bus.

A2: There are limited IO resources in Arduino 2009/Uno board, if I use 16 bit data bus, and

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sum up with touch screen controller and TF card reader IOs, there will be not any more pins for other shield. So use a latch to latch higher 8bit and write with 8bit lower byte simultaneously.

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