3.2” inch Arduino LCD Shield User Guide

Rev 2.0, Nov 2012

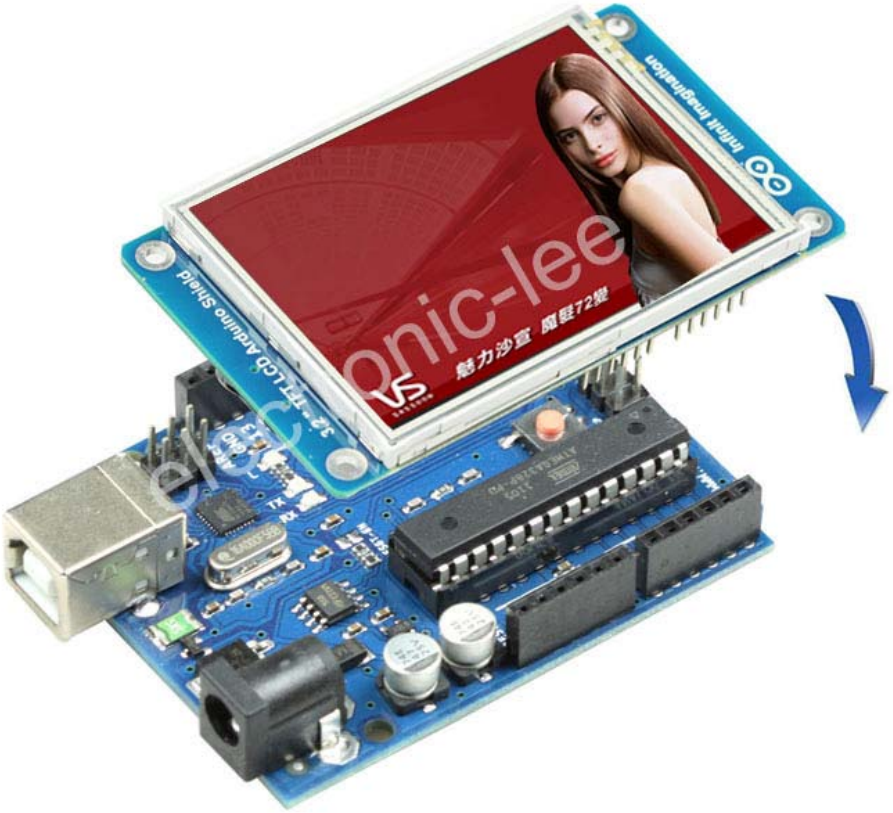

Table of Contents

Revision History

Revision	Description	Confirm by
V1.0	First release hardware version Rev.A, only support 16bit mode, add support ITDB library	Lee
V1.1	Document update for library link, add support for UTFT library	Nova
V2.0	Hardware update to Rev.B, change library to support 8bit mode add support for UTFT. 16bit mode no longer supported and ITDB library no longer supported	Lee

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1 Introduction

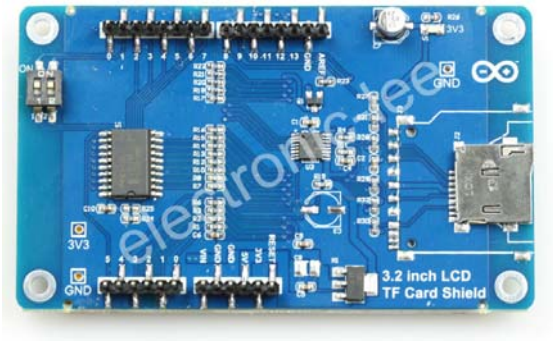
The idea of develop the LCD shield for Arudino is that the LCD is so widely used in mobile phones, handsets, and portable devices, but there is no such thing for Arduino. Although there are many different LCD module out there from 1.8” ~ 7” with 8bit or 16bit data bus, they are not easy to use and you 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/UTFT 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
- UTFT open source graphic library support
- Support Arduino/Maple/Chipkit platform

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]
8	8	8	TF_CS
9	9	9	Touch_IRQ (IRQ)
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	Read (RD)

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 Pin9, while TF reader use Pin8).

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
www.uctronics.com/download/Arduino_shileds/3inch2_RevB.zip
After downloading, decompress the zip file and copy the UTFT 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 UTFT_Demo 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: Does the shield support Maple or Chipkit platform?
A2: Yes, from hardware concept the shield supports Maple and Chipkit platform because it has onboard level shifter to support both 3.3V and 5V IO level system. But we will continue add library support these platform.

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Q3: Why does the shield doesn’t support TF/SD card read on Mega board?
A3: It is know issue that the UNO and Mega board doesn't compatible in some ways, for example UNO SPI port pins are 10,11,12,13, and I2C port pins are A4,A5, while Mega board SPI port pins are 50,51,52,53, and I2C port pins are 20,21. The simply way to resolve the issue is to fly SD signals to Mega SPI pins and use standard library, then everything is OK.

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