S5U13781R01C100

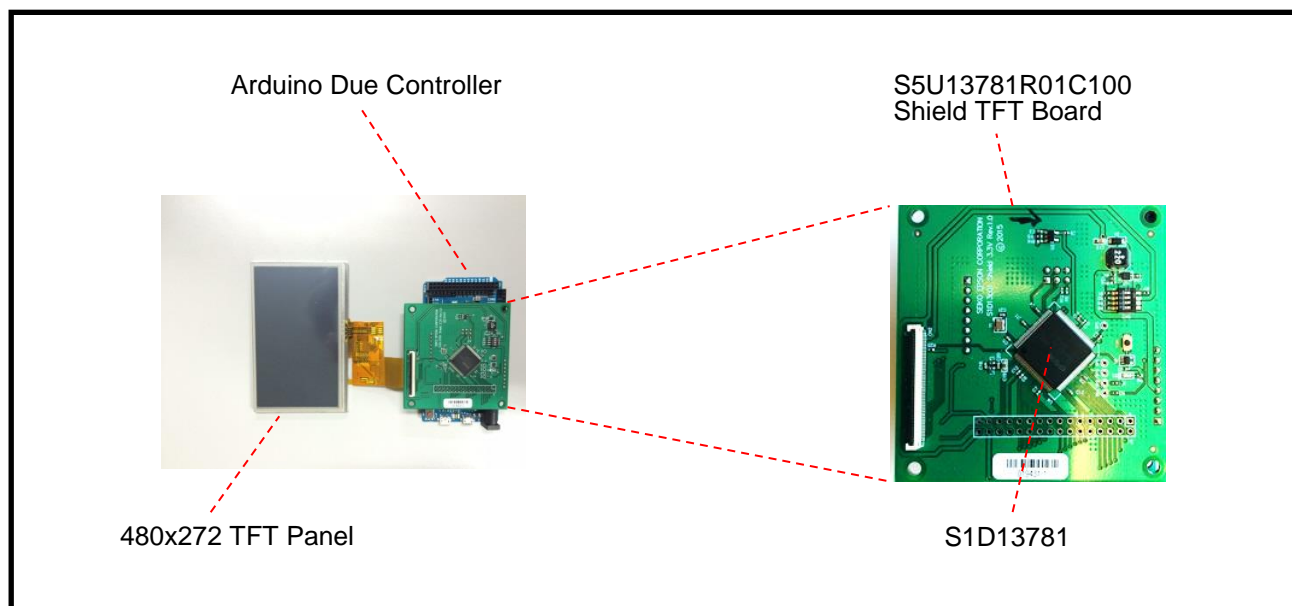# S1D13781 Shield TFT Board for Arduino® Due

■ Summary

The S1D13781 Shield TFT Board adds support for up to WQVGA TFT graphics to the Arduino Due and provides a software library of simple graphics functions. It is designed to provide evaluation of the S1D13781 LCD controller and enables rapid prototyping on the Arduino Due board. It uses the Arduino Due's standard SPI interface, providing a simple hardware connection which is powered by the Arduino Due board. The S1D13781 Shield board includes two FPC connectors (40-pin and 54-pin) which can be used to connect to a WQVGA or QVGA TFT panel available separately.

The S1D13781 is a simple, multi-purpose Graphics LCD Controller with 384KByte embedded SRAM display buffer which supports RGB interface TFT panels. The embedded display buffer allows WQVGA up to 480x272 at 24bpp, or 480x272 at 16bpp (Main Layer) and 480x272 at 8bpp (PIP Layer) for two layer display. The S1D13781 is a flexible, low power, single chip solution designed to meet the demands of embedded markets and devices where total system cost and battery life are major concerns.

The S1D13781 Shield TFT Board can also be used to evaluate the low cost S1D13L01 LCD Controller which shares the same features as the S1D13781 except for BitBLT functionality*.

* See the S1D13781 and S1D13L01 Hardware Specifications for complete feature list.

■ Typical System

Arduino Due Controller

S5U13781R01C100
Shield TFT Board

480x272 TFT Panel

S1D13781

■ Features

- Simple connection with Arduino Due using SPI
- Graphics Library for use with Arduino Sketch IDE
- 40-pin FPC Connector for 480x272 TFT
- 54-pin FPC Connector for 320x240 TFT
- LED Backlight Driver included on Shield board
- 3.3V IO

- Integrated Epson S1D13781 LCD Controller with:
  - 384KByte Embedded Memory
  - Multiple Window (Layer) support for Main and PIP
  - Rotation (SwivelView™) 90°, 180°, 270°
  - Alpha Blending, Transparency, Flashing

■ Software Library

The S1D13781 Shield Graphics Library is used with the Arduino Sketch IDE to provide hardware access and simple graphics routines which enable users to quickly display graphics and text to a LCD panel connected to the S1D13781 Shield TFT Board.

Available Functions:
- Direct Hardware Access – routines for Register and Memory IO, and functions to control S1D13781 features
- Draw Pixel – draws pixel at specified x,y location using selected color
- Draw Line – draws line between specified x,y locations using selected color
- Draw Rectangle – draws rectangle (or filled rectangle) using selected color
- Draw Text – draws text and multiline text to the specified window using a customizable font
- Copy Area – routine which uses the BitBLT function to copy image data to another area of the display

Purchase the S1D13781 Shield TFT Board from:

EPSON semiconductor website:

http://global.epson.com/products/semicon/