



# ARDUINO LCD SCREEN

Code: A000096



Use this small LCD screen with Arduino Robot, Esplora, or on breadboard.

## OVERVIEW

- The Arduino TFT screen is a backlit LCD screen with headers. You can draw text, images, and shapes to the screen with the TFT library. There is an onboard micro-SD card slot on the back of the screen that can, among other things, store bitmap images for the screen to display.

The screen's headers are designed to fit into the socket on the front of the Arduino Esplora, but it is compatible with any AVR-based Arduino (Uno, Leonardo, etc) or with the Arduino Due. To connect the screen to other Arduino boards, read the tutorial on this link.

## Connecting to other Arduino boards

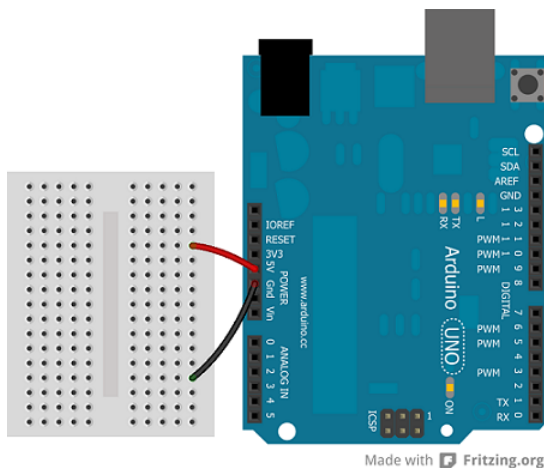
Even if the screen's headers are designed to fit into the socket on the front of the Arduino Esplora or the Arduino Robot but, this module is compatible with any AVR-based Arduino (Uno, Leonardo, etc...) or with the Arduino Due. If you want to use one these other boards, some slight changes on connections are required.



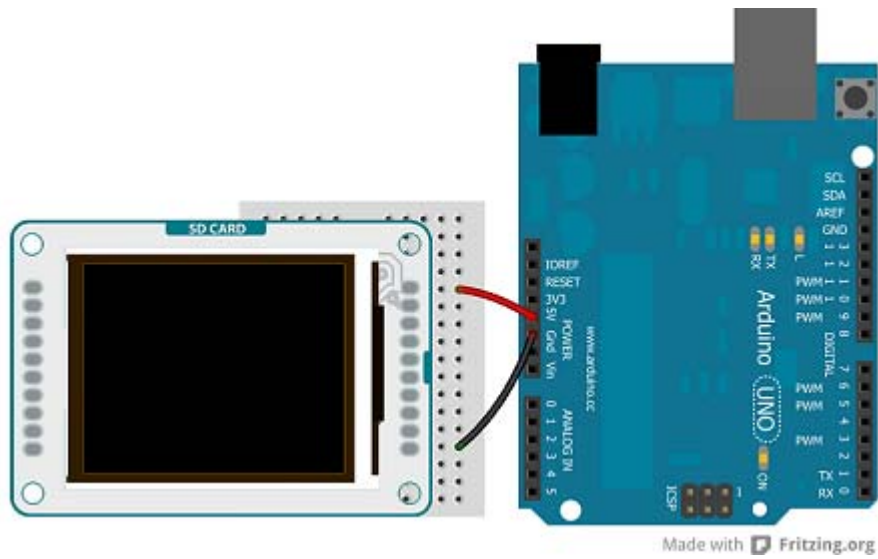
You can either connect the screen with hardware SPI pins, or define your own set of pins. Using the hardware SPI is faster when drawing to the screen.

- **Arduino Uno:**

Connect power and ground to the breadboard.

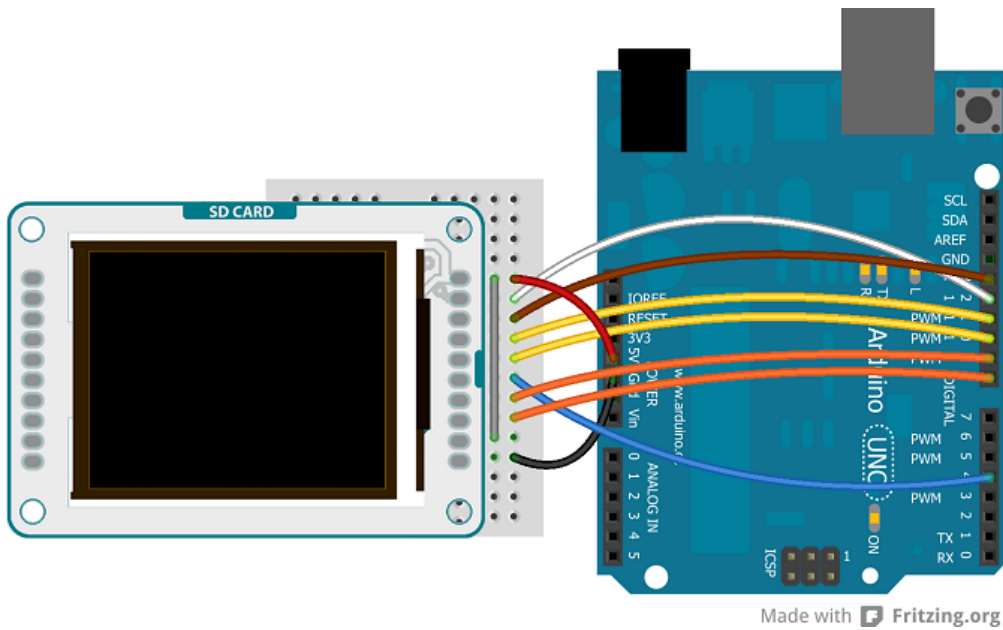


Connect the screen to the breadboard. The headers on the side of the screen with the small blue tab and arrow should be the ones that attach to the board. Pay attention to the orientation of the screen, in these images, it is upside down.

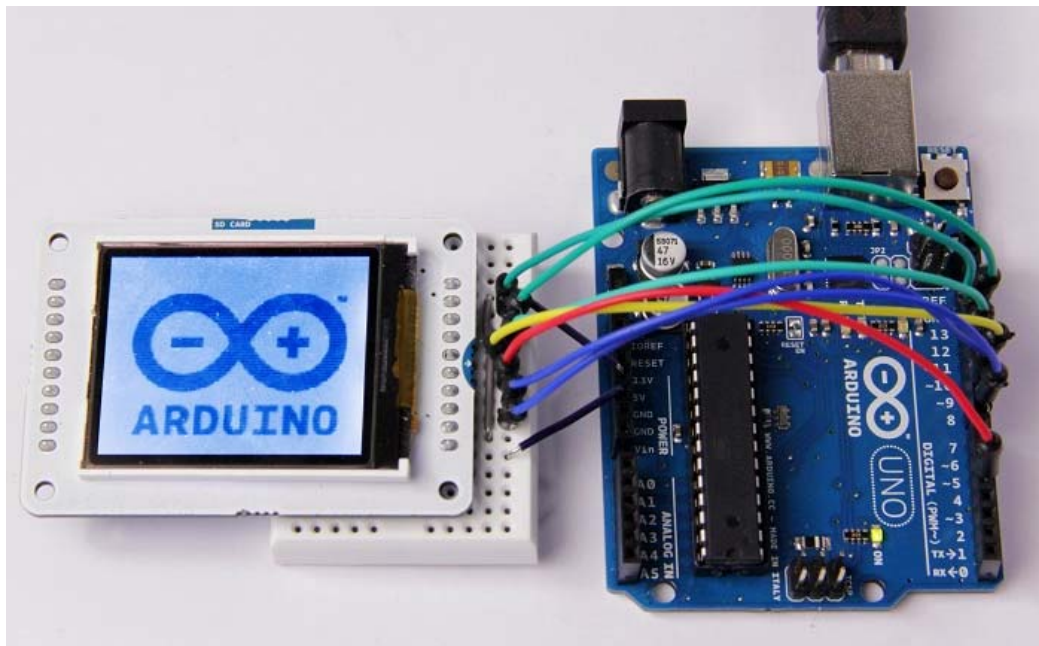


Connect the pins following this default configuration:

<b>+5V:</b>	+5V
<b>MISO:</b>	pin 12
<b>SCK:</b>	pin 13
<b>MOSI:</b>	pin 11
<b>LCD CS:</b>	pin 10
<b>SD CS:</b>	pin 4
<b>D/C:</b>	pin 9
<b>RESET:</b>	pin 8
<b>BL:</b>	+5V
<b>GND:</b>	GND



Connecting the pins in the proper way, you can see the lcd screen working with your Uno (or Duemilanove) just uploading the simple "*TFTBitmapLogo*" sketch.



- **Arduino Leonardo & Arduino Yun:**

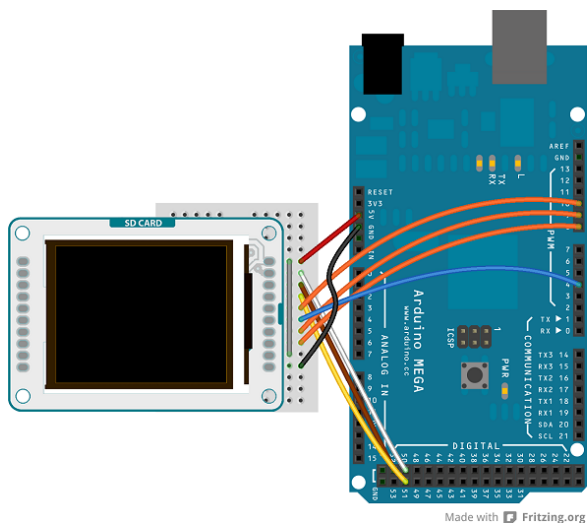
The Arduino Leonardo & Arduino Yun use different pins to be compatible with the lcd screen. To set the pins MISO, MOSI and SCK, you have to use the ICSP terminals.



- **Arduino Mega 2560 e Mega ADK:**

To connect the lcd screen to a Mega board, use this pin configuration:

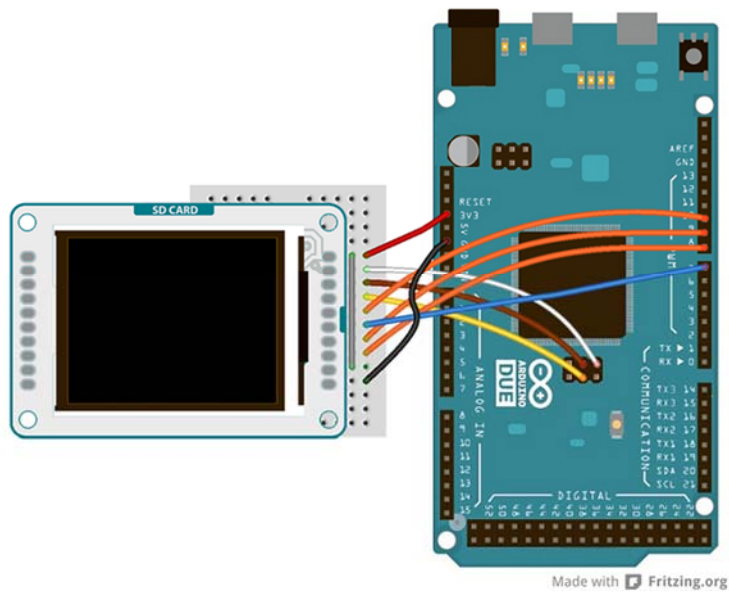
<b>+5V:</b>	+5V
<b>MISO:</b>	50 on Mega 2560 (Miso on ADK)
<b>SCK:</b>	52 on Mega 2560 (Sck on ADK)
<b>MOSI:</b>	51 on Mega 2560 (Mosi on ADK)
<b>LCD CS:</b>	pin 10
<b>SD CS:</b>	pin 4
<b>D/C:</b>	pin 9
<b>RESET:</b>	pin 8
<b>BL:</b>	+5V
<b>GND:</b>	GND



- **Arduino Due:**

To connect the lcd screen to an Arduino Due, use this pin configuration and don't forget to set the right value for the variable "sd\_cs" (`#define sd_cs 7`) in the sketch:

<b>+5V:</b>	+3.3V
<b>MISO:</b>	Miso pin (white wire on SPI)
<b>SCK:</b>	Sck pin (brown wire on SPI)
<b>MOSI:</b>	Mosi pin (yellow wire on SPI)
<b>LCD CS:</b>	pin 10
<b>SD CS:</b>	pin 7
<b>D/C:</b>	pin 9
<b>RESET:</b>	pin 8
<b>BL:</b>	+3.3V
<b>GND:</b>	GND



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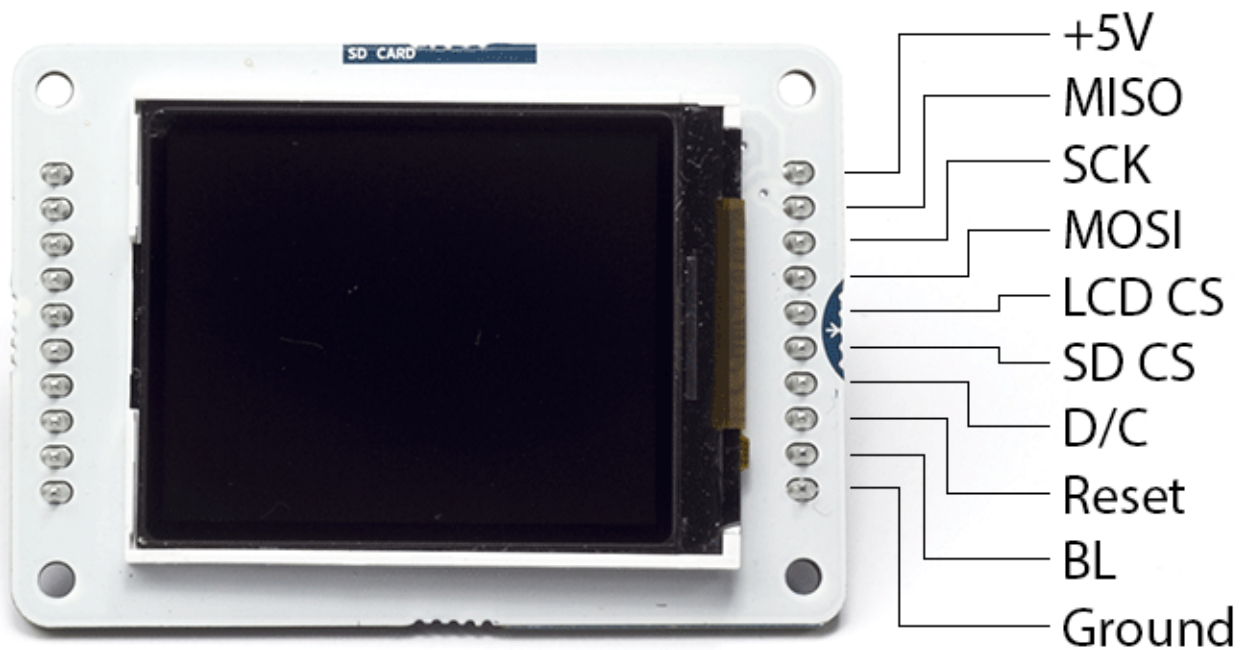
- Getting Started

You can find in the Getting Started section all the information you need to configure your board, use the Arduino Software (IDE), and start tinkering with coding and electronics.

Need Help?

- On the Software on the Arduino Forum
- On Projects on the Arduino Forum
- On the Product itself through our Customer Support

- Hardware



The screen is 1.77" diagonal, with 160 x 128 pixel resolution. The TFT library interfaces with the screen's controller through SPI when using the TFT library. Refer to the screen's data sheet for complete details.

- The screen runs on +5 VDC
- The micro-SD slot is accessible through the SD card library.
- The LED backlight is dimmable by PWM.
- The screen's headers are laid out so it easily sockets into the Arduino Esplora and Arduino Robot.



## Library

The Arduino TFT library extends the Adafruit GFX, and Adafruit ST7735 libraries that it is based on. The GFX library is responsible for the drawing routines, while the ST7735 library is specific to the screen on the Arduino screen. The Arduino specific additions were designed to work as similarly to the Processing API as possible.

The library is backwards compatible, which means you can still use the Adafruit functions described here.

The TFT library relies on the SPI library, which must be included in any sketch that uses the screen. If you wish to use the SD card, you need to include the SD library as well.

