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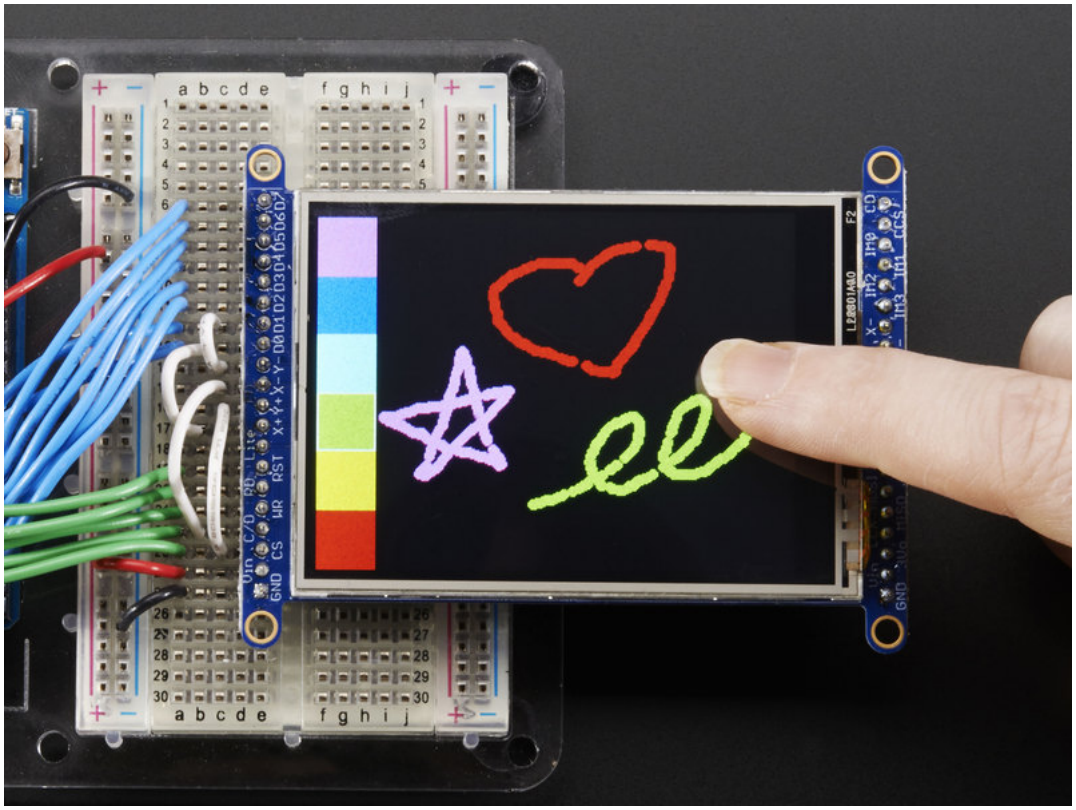


Adafruit 2.8" Color TFT Touchscreen Breakout v2

Color! Lights! Touch! 8-Bit! SPI! MicroSD Card! Pickles!

Contributors

lady ada

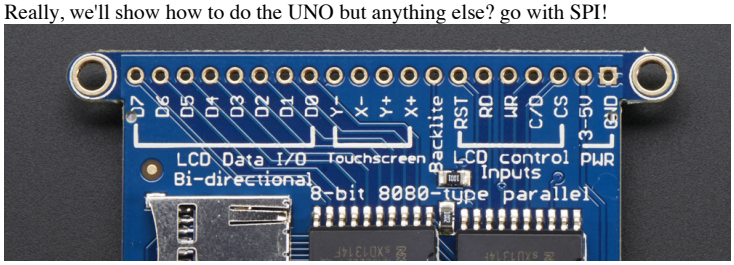
8-Bit Wiring and Test

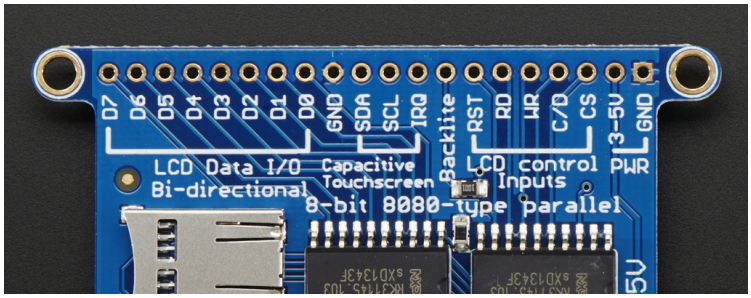
by lady ada

8-Bit Wiring

Wiring up the 8-bit mode is kind of a pain, so we really only recommend doing it for UNO (which we show) and Mega (which we describe, and is pretty easy since its 8 pins in a row). Anything else, like a Leonardo or Micro, we strongly recommend going with SPI mode since we don't have an example for that. Any other kind of 'Arduino compatible' that isn't an Uno, try SPI first. The 8-bit mode is hand-tweaked in the **Adafruit_TFTLCD pin_magic.h** file. Its really only for advanced users who are totally cool with figuring out bitmasks for various ports & pins.

Really, we'll show how to do the UNO but anything else? go with SPI!



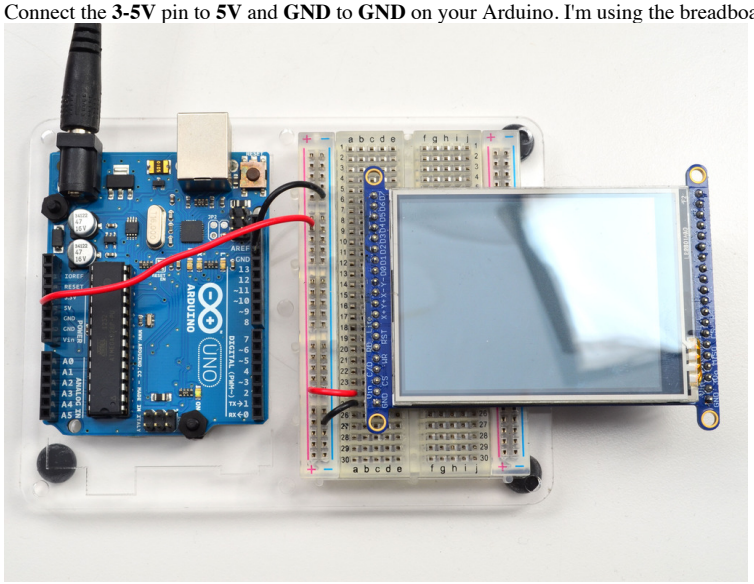


Make sure you're soldering and connecting to the 8-bit side!

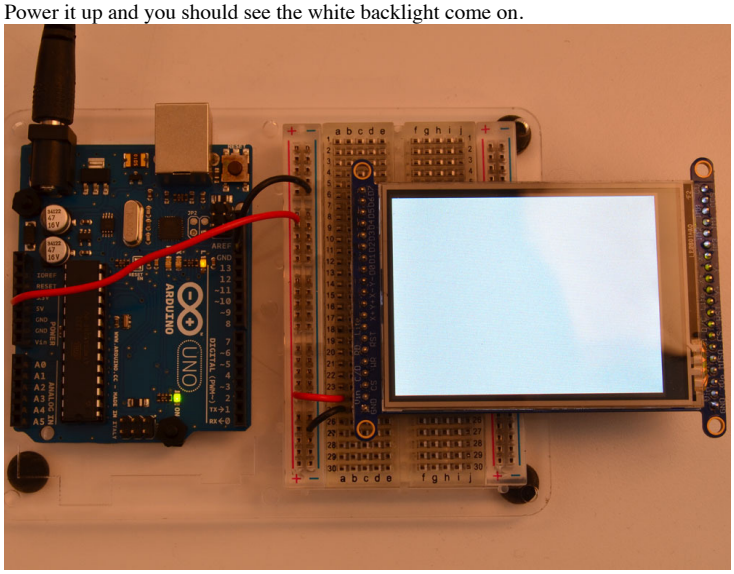
Part 1 - Power & backlight test

Begin by wiring up the **3-5VDC** and **GND** pins.

Connect the **3-5V** pin to **5V** and **GND** to **GND** on your Arduino. I'm using the breadboard rails but you can also just wire directly.

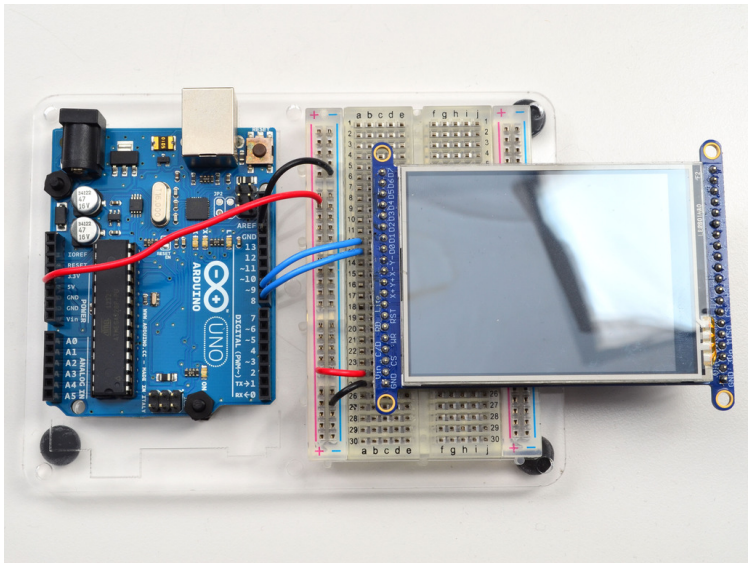


Power it up and you should see the white backlight come on.

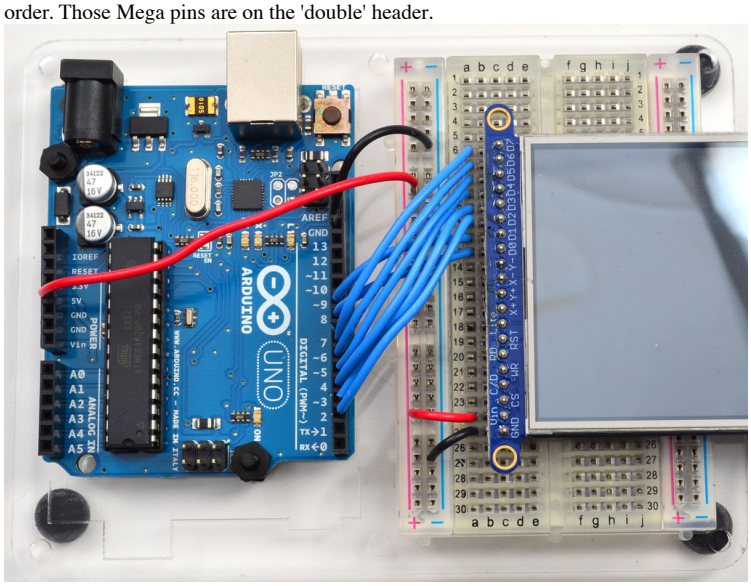


Part 2 - Data Bus Lines

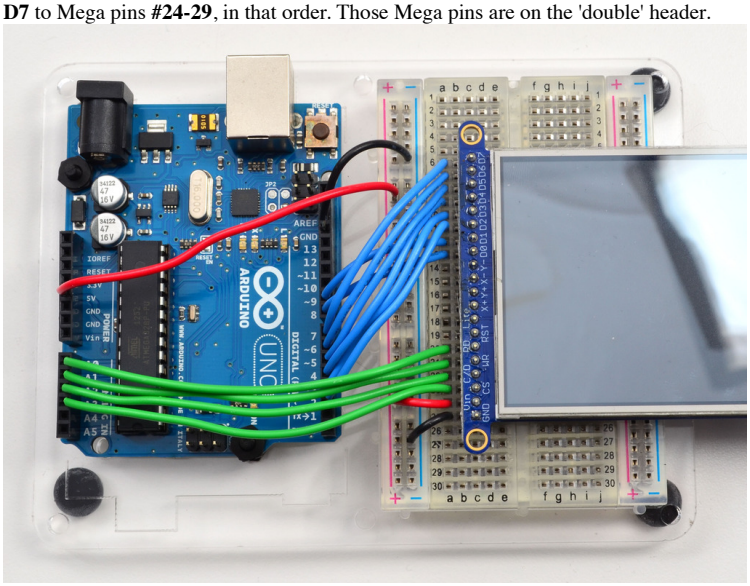
Now that the backlight is working, we can get the TFT LCD working. There are many pins required, and to keep the code running fairly fast, we have 'hardcoded' Arduino digital pins **#2-#9** for the 8 data lines.
However, they are not in that order! D0 and D1 go to **digital #8** and **#9**, then D2-D7 connect to **#2** thru **#7**. This is because Arduino pins #0 and #1 are used for serial data so we can't use them



Begin by connecting **D0** and **D1** to digital **#8** and **9** respectively as seen above. If you're using a Mega, connect the TFT Data Pins **D0-D1** to Mega pins **#22-23**, in that order. Those Mega pins are on the 'double' header.

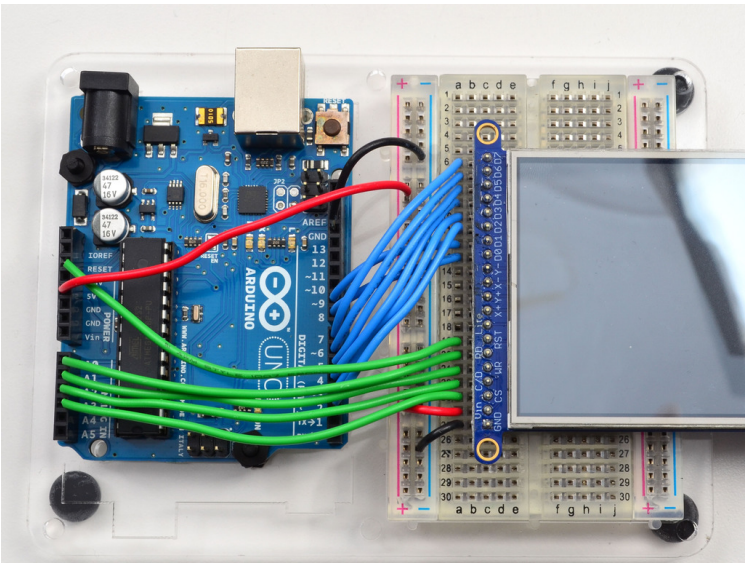


Now you can connect the remaining 6 pins over. Connect **D2-D7** on the TFT pins to digital **2** thru **7** in that order. If you're using a Mega, connect the TFT Data Pins **D2-D7** to Mega pins **#24-29**, in that order. Those Mega pins are on the 'double' header.



In addition to the 8 data lines, you'll also need 4 or 5 control lines. These can later be reassigned to any digital pins, they're just what we have in the tutorial by default.

- Connect the third pin **CS** (**Chip Select**) to Analog 3
- Connect the fourth pin **C/D** (**Command/Data**) to Analog 2
- Connect the fifth pin **WR** (**Write**) to Analog 1
- Connect the sixth pin **RD** (**Read**) to Analog 0



You can connect the seventh pin **RST** (**Reset**) to the Arduino Reset line if you'd like. This will reset the panel when the Arduino is Reset. You can also use a digital pin for the LCD reset if you want to manually reset. There's auto-reset circuitry on the board so you probably don't need to use this pin at all and leave it disconnected

The **RD** pin is used to read the chip ID off the TFT. Later, once you get it all working, you can remove this pin and the ID test, although we suggest keeping it since its useful for debugging your wiring.
OK! Now we can run some code

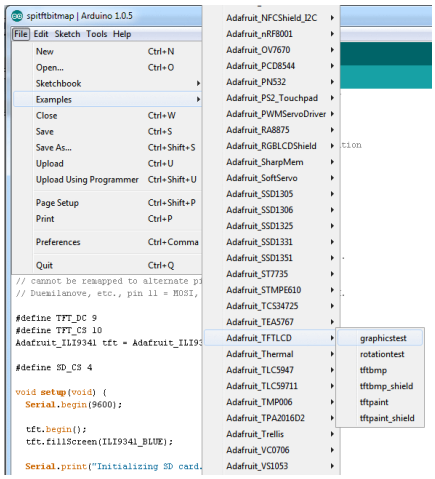
8-Bit Library Install

We have example code ready to go for use with these TFTs. It's written for Arduino, which should be portable to any microcontroller by adapting the C++ source.

Two libraries need to be downloaded and installed: first is the Adafruit_TFTLCD library (this contains the low-level code specific to this device), and second is the Adafruit GFX Library (which handles graphics operations common to many displays we carry). If you have **Adafruit_GFX** already, make sure its the most recent version since we've made updates for better performance
Download the Adafruit_TFTLCD library
Download the Adafruit GFX library
Download both ZIP files, uncompress and rename the folders to **Adafruit_TFTLCD** (contains **Adafruit_TFTLCD.cpp** and **.h**) and **Adafruit_GFX** (contains **Adafruit_GFX.cpp** and **.h**) respectively. Then place them inside your Arduino **libraries** folder and restart the Arduino IDE. If this is all unfamiliar, we have a tutorial introducing Arduino library concepts and installation.
In the **Adafruit_TFTLCD** Library folder, you may need to edit **Adafruit_TFTLCD.h**. On about line 12, you will see

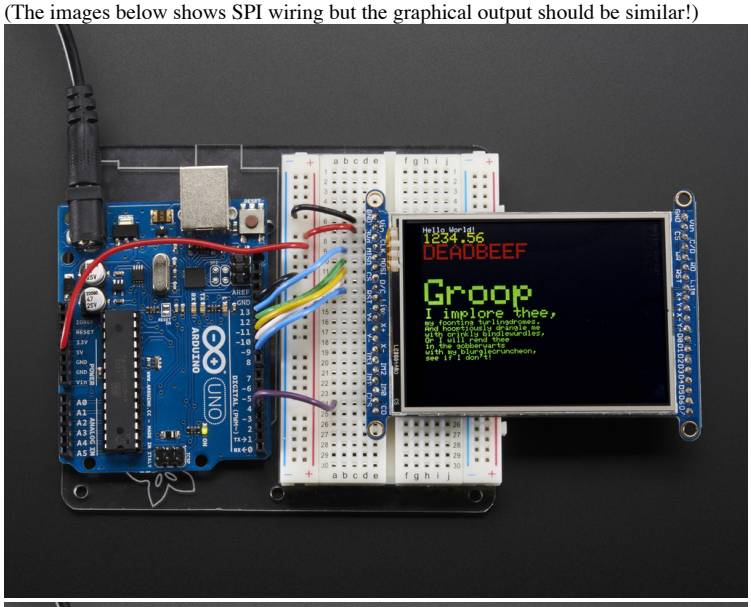
```
#define USE_ADAFRUIT_SHIELD_PINOUT
```

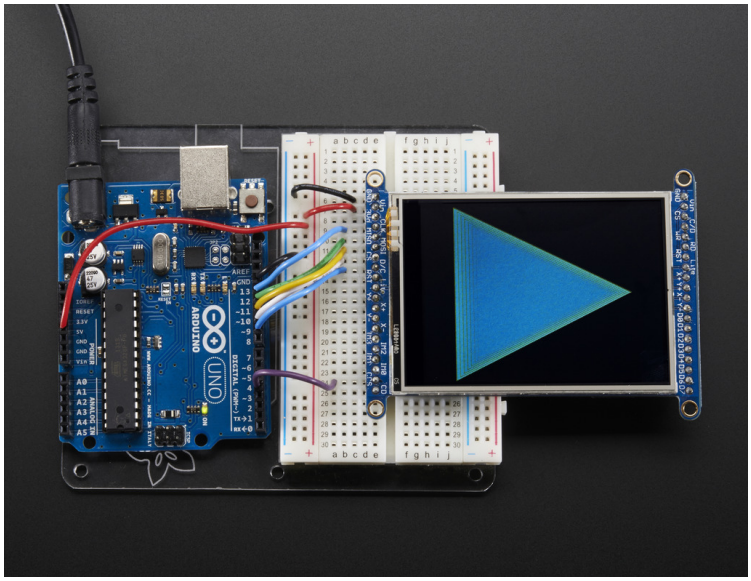
Make sure this line is commented out with a // in front (it should but if you're having issues, its worth checking.



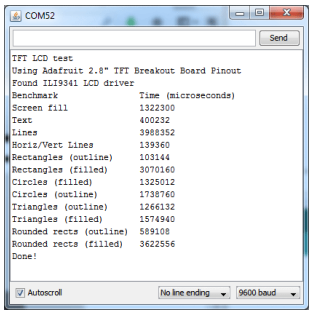
After restarting the Arduino software, you should see a new **example** folder called **Adafruit_TFTLCD** and inside, an example called **graphicstest**. Upload that sketch to your Arduino. You may need to press the Reset button to reset the arduino and TFT. You should see a collection of graphical tests draw out on the TFT.

(The images below shows SPI wiring but the graphical output should be similar!)

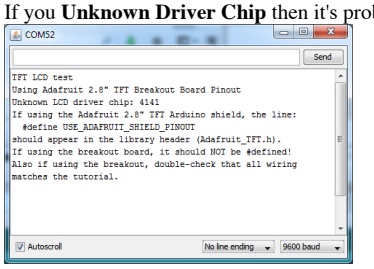




If you're having difficulties, check the serial console.The first thing the sketch does is read the driver code from the TFT. It should be **0x9341** (for the **ILI9341** controller inside)

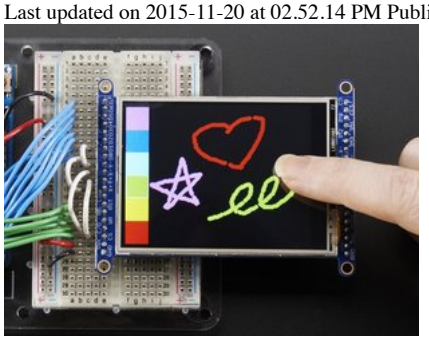


If you **Unknown Driver Chip** then it's probably something with your wiring, double check and try again!



WIRING AND TEST SPI WIRING AND TEST

Last updated on 2015-11-20 at 02.52.14 PM Published on 2014-03-18 at 04.50.41 PM



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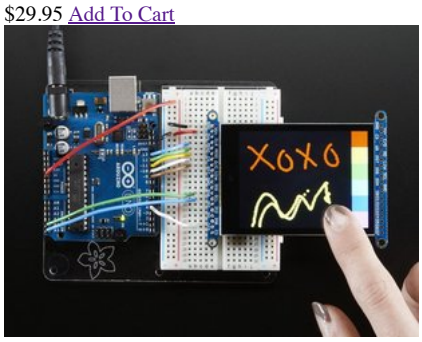

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by lady ada

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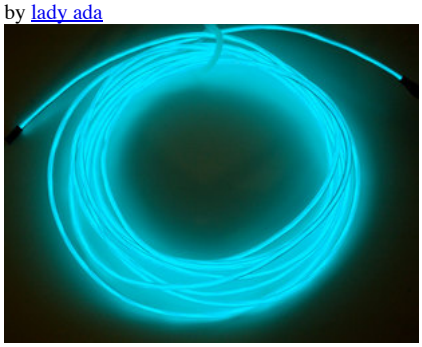
by lady ada



EL Wire, also known as Electroluminescent wire, is a stiff wire core coated with phosphor and then covered with a protective PVC sheath. When an AC signal is applied to it, it glows a cool neon color. Find out how to solder, power, and work with EL Wire in your next project.

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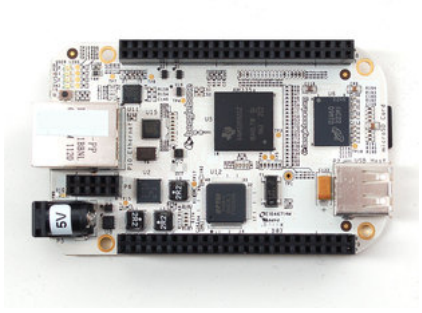

New from the fine people who have brought us the Beagle Board, we now have a smaller, lighter, but powerful single board linux computer, Beagle Bone! We like this move to a more compact and integrated SBC. For example, there is onboard Ethernet and USB host, as well as a USB client interface (a FTDI chip for shell access). It even comes preloaded with Angstrom Linux on the 4 GB microSD card! Here are some tips and tricks to get your BeagleBone up and running.
×

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