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a place for the electronic hobbyist

Arduino 1.44 in SPI TFT Display Tutorial

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An Entry Level Color Display



(<https://i1.wp.com/henrysbench.capnfatz.com/wp-content/uploads/2016/02/144-Display-TFT.jpg>)Based on the ILI9163, this is a head on competitor with the Nokia 5110 in terms of being small and low cost. It boasts a SPI Interface, 128 x 128 pixel resolution, color and is easily integrated into Arduino projects.

This tutorial will get you communicating to your display using a couple of readily available libraries.

With a little practice, you should be producing rich color graphics for your project in no time.

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Getting One of These Displays.

Like the 5110, nearly everyone selling Arduino compatible components is selling on of these.

eBay ([http://rover.ebay.com/rover/1/711-53200-19255-0/1?](http://rover.ebay.com/rover/1/711-53200-19255-0/1?icep_ff3=9&pub=5575103433&toolid=10001&campid=5337702195&customid=&icep_uq=Arduino+1.44+in+TFT+Display)

[icep_ff3=9&pub=5575103433&toolid=10001&campid=5337702195&customid=&icep_uq=Arduino+1.](http://rover.ebay.com/rover/1/711-53200-19255-0/1?icep_ff3=9&pub=5575103433&toolid=10001&campid=5337702195&customid=&icep_uq=Arduino+1.44+in+TFT+Display)

Amazon ([http://www.amazon.com/gp/search/ref=as_li_qf_sp_sr_il_tl?](http://www.amazon.com/gp/search/ref=as_li_qf_sp_sr_il_tl?ie=UTF8&camp=1789&creative=9325&index=aps&keywords=Arduino%201.44%20SPI%20TFT&linkCode=sl_1&linkId=MTE4CHW64DX6IGM6)

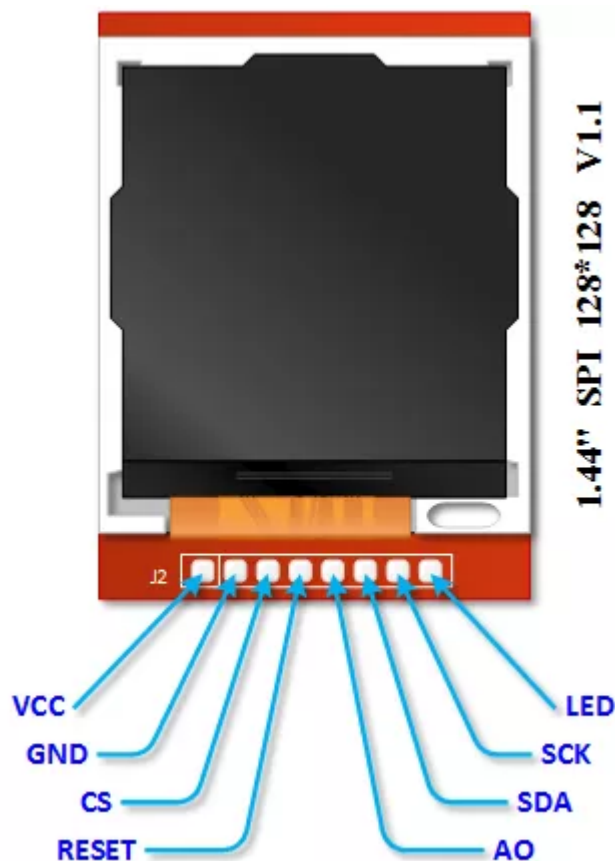
[ie=UTF8&camp=1789&creative=9325&index=aps&keywords=Arduino%201.44%20SPI%20TFT&linkCc](http://www.amazon.com/gp/search/ref=as_li_qf_sp_sr_il_tl?ie=UTF8&camp=1789&creative=9325&index=aps&keywords=Arduino%201.44%20SPI%20TFT&linkCode=sl_1&linkId=MTE4CHW64DX6IGM6)
20&linkId=MTE4CHW64DX6IGM6) Ali-Express

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[catId=0&initiative_id=SB_20180210092636&SearchText=ILI9163](http://www.anrdoezrs.net/links/8535047/type/dlg/https://www.aliexpress.com/wholesale?catId=0&initiative_id=SB_20180210092636&SearchText=ILI9163))

1.44 in. ILI9163 Display Pin Outs

While some of the vendors claim that this display can be used at 5 volts, I use it at 3.3 volts with an 8 bit, bi-directional level converter.



([https://i0.wp.com/henrysbench.capnfatz.com](https://i0.wp.com/henrysbench.capnfatz.com/content/uploads/2016/02/ILI9163-1_44-in-Display-Pin-Outs.png)
[content/uploads/2016/02/ILI9163-1_44-in-](https://i0.wp.com/henrysbench.capnfatz.com/content/uploads/2016/02/ILI9163-1_44-in-Display-Pin-Outs.png)
[Display-Pin-Outs.png](https://i0.wp.com/henrysbench.capnfatz.com/content/uploads/2016/02/ILI9163-1_44-in-Display-Pin-Outs.png))

Arduino ILI9163 1.44 in TFT Display Tutorial

This simple tutorial prints 'Hello World' to your display. Its intent is to keep things simple as you learn how to interface the display to your Arduino.

Get the Necessary Libraries

This tutorial uses the AdaFruit_GFX and the TFT_ILI9163 libraries.

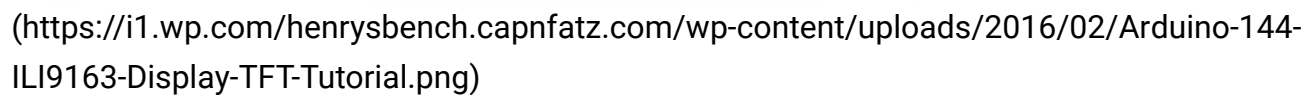
The Ada Fruit library can be found HERE (<https://github.com/adafruit/Adafruit-GFX-Library>).

Sumotoy's TFT ILI9163 library is also on Github via this LINK (https://github.com/sumotoy/TFT_ILI9163C).

If you're new to libraries, the Arduino site has instructions for putting them to use (<https://www.arduino.cc/en/Guide/Libraries>).

Connecting Your Arduino to the ILI9163 Display

As I mentioned previously, there are sellers who will claim that this will work as a 5 volt device. There are also YouTube videos that show that it works just fine in this mode. I've opted to treat it as a 3.3 Volt module. It works this way as well.



4/11

```
// Henry's Bench
//  1.44"  128 * 128  SPI  V1.1 Display Tutorial

#include <SPI.h>
#include <Adafruit_GFX.h>
#include <TFT_ILI9163C.h>

// Definition of WHITE
#define WHITE  0xFFFF

/*
Your Connections to an Uno (Through a Level Shifter)

    LED to 3.3V
    SCK to D13
    SDA to D11
    A0 to D8
    RST to D9
    CS to D10
    GND to GND
    VCC to 3.3V
    */

#define CS 10
#define DC 9

// Declare an instance of the ILI9163
TFT_ILI9163C tft = TFT_ILI9163C(CS, 8, DC);

void setup() {
    tft.begin();
    tft.fillScreen();
}

void loop(){
    testText();
    delay(500);
}
```

```
unsigned long testText() {  
  
    tft.setCursor(29, 63);  
    tft.setTextColor(WHITE);  
    tft.setTextSize(1);  
    tft.println("Hello World!");  
}
```

Testing Your Sketch

If successful, you will see 'Hello World!' in the middle of your TFT Screen. If not, double check your connections.

Using the ILI9163 Library Examples

The ILI9163 library you installed contained several examples that show case the capabilities of the device. However you will need to edit one of the lines in each example to allow them to work.

Find the line: **TFT_ILI9163C** tft = **TFT_ILI9163C**(_CS, _DC);

Change it to read: **TFT_ILI9163C** tft = **TFT_ILI9163C**(CS, 8, DC);



J1-216 I2C Monitor - Jupiter Instruments

Ad jupiteri.com



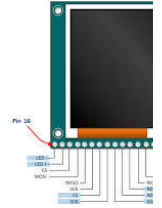
Arduino Adafruit GFX: Printing to the TFT Screen

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High-pressure Applications - 3 selectable pressure ranges

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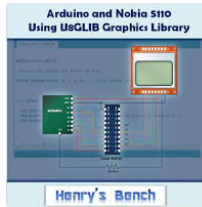
1.8TFT V1.0 ST7735 Arduino Tutorial World

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Big Serial Input LED Displays - RS232 / RS485 / Ethernet Input

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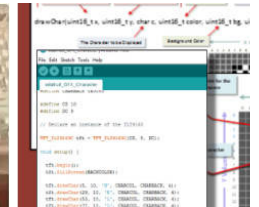
Arduino Nokia 5110 with U8GLIB Tutorial

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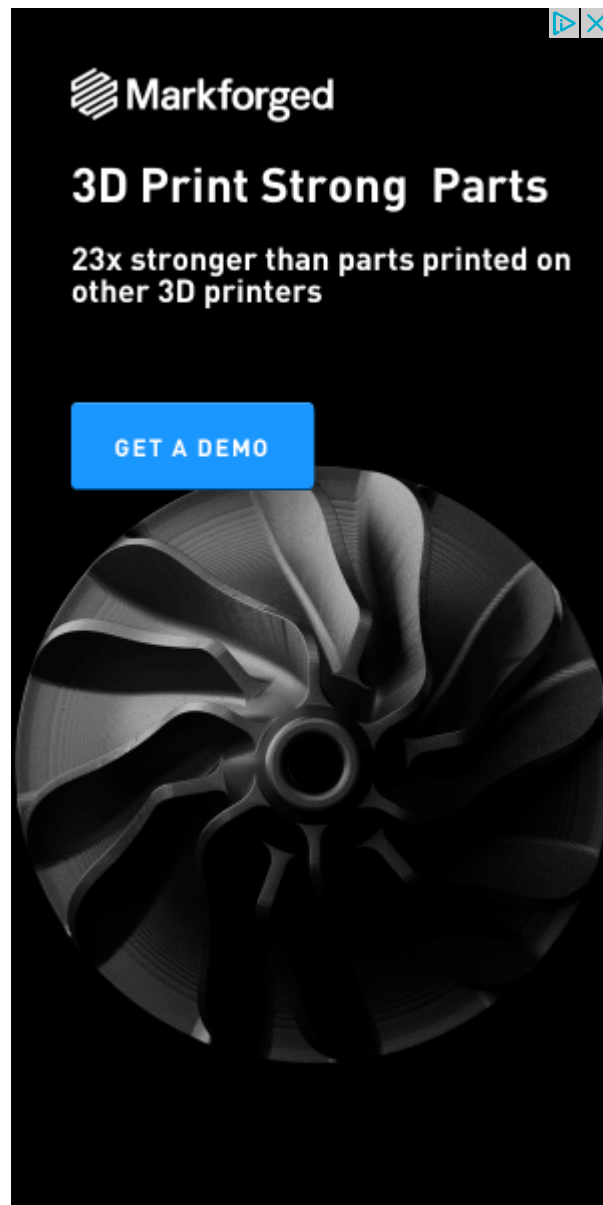
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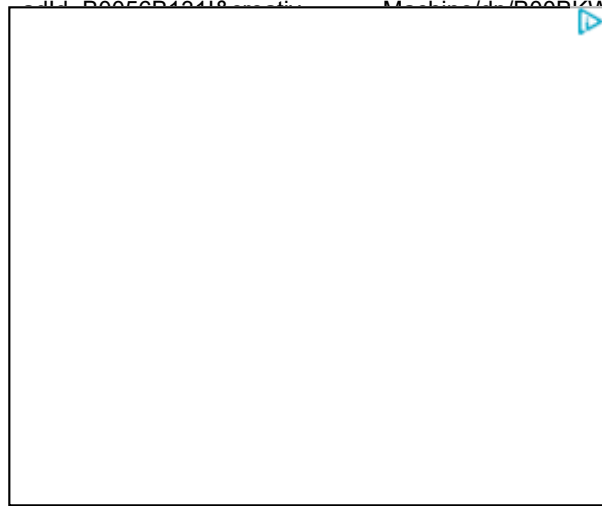


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tutorial%2F&slotnum=0&imprToken=E4Gk5msmy7YJw7pI8KA&adType=smart&adMode=auto&adFormat=grid&ir
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Screw the Small Stuff

(<http://amzn.to/2kpPRy6>)



Magnifying Glasses

(<http://amzn.to/2loKBJm>)



What I use

(<http://amzn.to/2liSGCV>)



3.3 & 5Vdc Supply

(<http://amzn.to/2kG4LyE>)



Very Handy

(https://www.amazon.com/gp/product/B00Q2TTQEE/ref=as_li_ss_tl?ie=UTF8&linkCode=ll1&tag=henrysbench-20&linkId=d544649c81bc5c4c563614b1af136157)

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