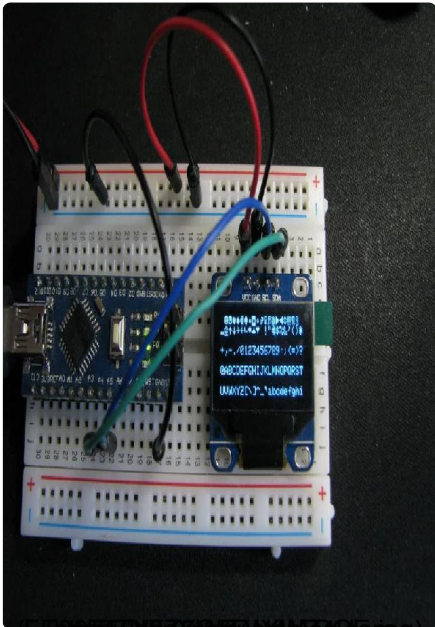


OLED I2c Display With Arduino



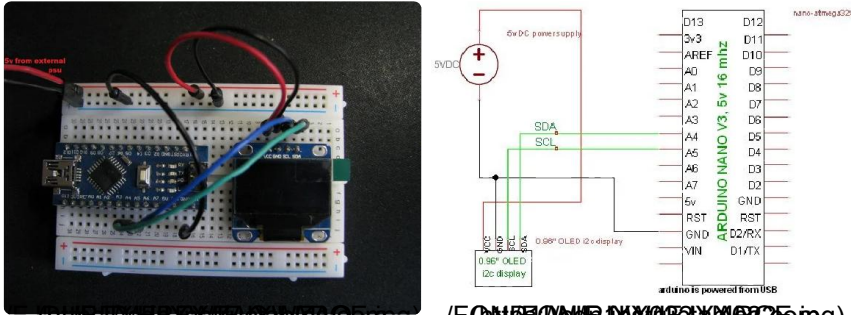
In this instructable I will show you how to connect and test a 0.96" i2c OLED display module to an arduino.

Parts:

- Breadboard and hookup wires
- Arduino (using a nano v3 5v 16mhz clone in this case)
- External power supply (regulated 5v)
- The OLED i2c display

I bought my display around 6 months ago, and I can't seem to find the exact display on ebay now, but searching for "0.96 ssd1306 i2c OLED" shows a whole lot of similar displays. Other sites, like adafruit, got the same displays if you prefer to shop there.

Step 1: Connecting Your Display



The display is connected by utilizing the i2c pins on your arduino.

Which pins to use for this differs on some arduino models, but on the UNO and NANO you use pin A4 (SDA) and A5 (SCL). If you're using another arduino, google the pinout and look for SDA and SCL pins. (For example, google "arduino mega pinout", and check the images).

I first attempted to power my display from my arduinos 5v. This worked, but only halfway – the display fired up, and started cycling the demos in the sketch we will see later on, and then froze after a few seconds.

I then powered my display from my external 5v supply (with common ground to the arduino), which did the trick – the display is now working properly.

The connections from the display:

- VCC to external 5v
- GND to external GND
- SCL to arduino pin A5 (or the SCL pin for your arduino)
- SDA to arduino pin A4 (or the SDA pin for your arduino)
- arduino GND pin to external psu GND

Arduino is connected to the computer via an USB cable. The USB powers the arduino.

Step 2: I2c Scanner

The screenshot shows the Arduino IDE interface. The main window displays the source code for the 'i2c_scanner' sketch. The code includes several version comments and a main loop that scans for I2C devices. The serial monitor window on the right shows the output of the scanner, which has detected an I2C device at address 0x3C. The address '0x3C' is circled in red in the original image.

```
// -----
// I2c_scanner
//
// Version 1
// This program (or code that looks like it)
// can be found in many places.
// For example on the Arduino.cc forum.
// The original author is not know.
// Version 2, Juni 2012, Using Arduino 1.0.1
// Adapted to be as simple as possible by Arduino.cc user Krodal
// Version 3, Feb 26 2013
// V3 by louarnold
// Version 4, March 3, 2013, Using Arduino 1.0.3
// by Arduino.cc user Krodal.
// Changes by louarnold removed.
// Scanning addresses changed from 0...127 to 1...119,
// according to the i2c scanner by Nick Gammon
// http://www.gammon.com.au/forum/?id=10896
// Version 5, March 28, 2013
// As version 4, but address scans now to 127.
// A sensor seems to use address 120.
//
// This sketch tests the standard 7-bit addresses
// Devices with higher bit address might not be seen properly.
//
Done uploading
Global variables use 522 bytes (25%) of dynamic memory, leaving 1,526 bytes
local variables. Maximum is 2,048 bytes.
```

```
I2C Scanner
Scanning...
I2C device found at address 0x3C !
done
Scanning...
I2C device found at address 0x3C !
done
Scanning...
I2C device found at address 0x3C !
done
```

To start out, we need to find out the i2c address of the display. To accomplish this, I use a quick i2c scanner uploaded to the arduino. The scanner code can be found on

<http://playground.arduino.cc/Main/I2cScanner> (<http://playground.arduino.cc/Main/I2cScanner>).

Copy and paste the code into your arduino IDE, build and upload, and fire up your serial monitor. If your display are connected, powered and working, you will get an address back from the scanner (in serial monitor). My display shows up at address 0x3C.

Step 3: Libraries

In this instructable I am using the arduino IDE (<http://arduino.cc>) and libraries from adafruit downloaded via github.

Link to the libraries:

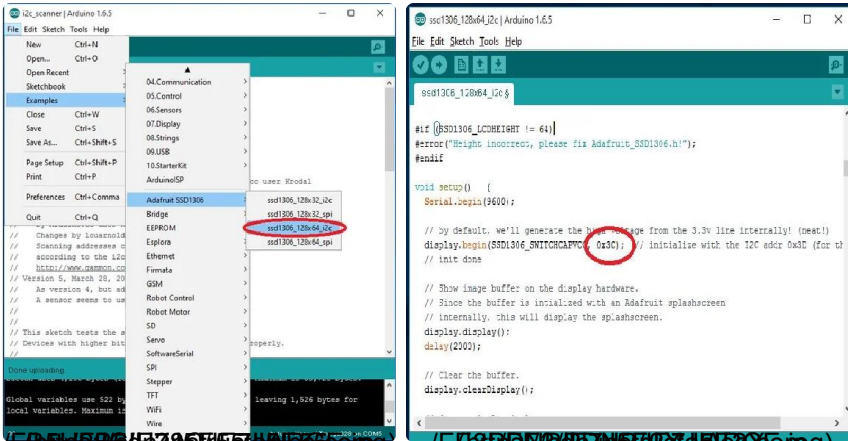
I will assume you know how to download and install libraries in your arduino IDE. If not, there are tons of nice tutorials/instructions out there on how to get started with the arduino IDE and libraries.

Both libraries below needs to be installed before you are able to continue with this instructable.

https://github.com/adafruit/Adafruit_SSD1306 (https://github.com/adafruit/Adafruit_SSD1306)
(SSD1306 library)

<https://github.com/adafruit/Adafruit-GFX-Library> (<https://github.com/adafruit/Adafruit-GFX-Library>)

Step 4: Test Sketch



Now that we know our displays i2c address, we can open the example sketch in our adafruit ssd1306 library.

In your arduino IDE, check your examples menu and locate the 128x64 i2c sketch found under Adafruit SSD1306 (as shown in the picture).

Change the address of the display to whatever the scanner told you, in my case 3x0C.

Compile and upload to your arduino, give it a second, and the display should fire up and show some different display modes.

The demo sketch ends with stars that continues to fall forever. You can copy-paste from the demo sketch to use the display modes that fits your needs.