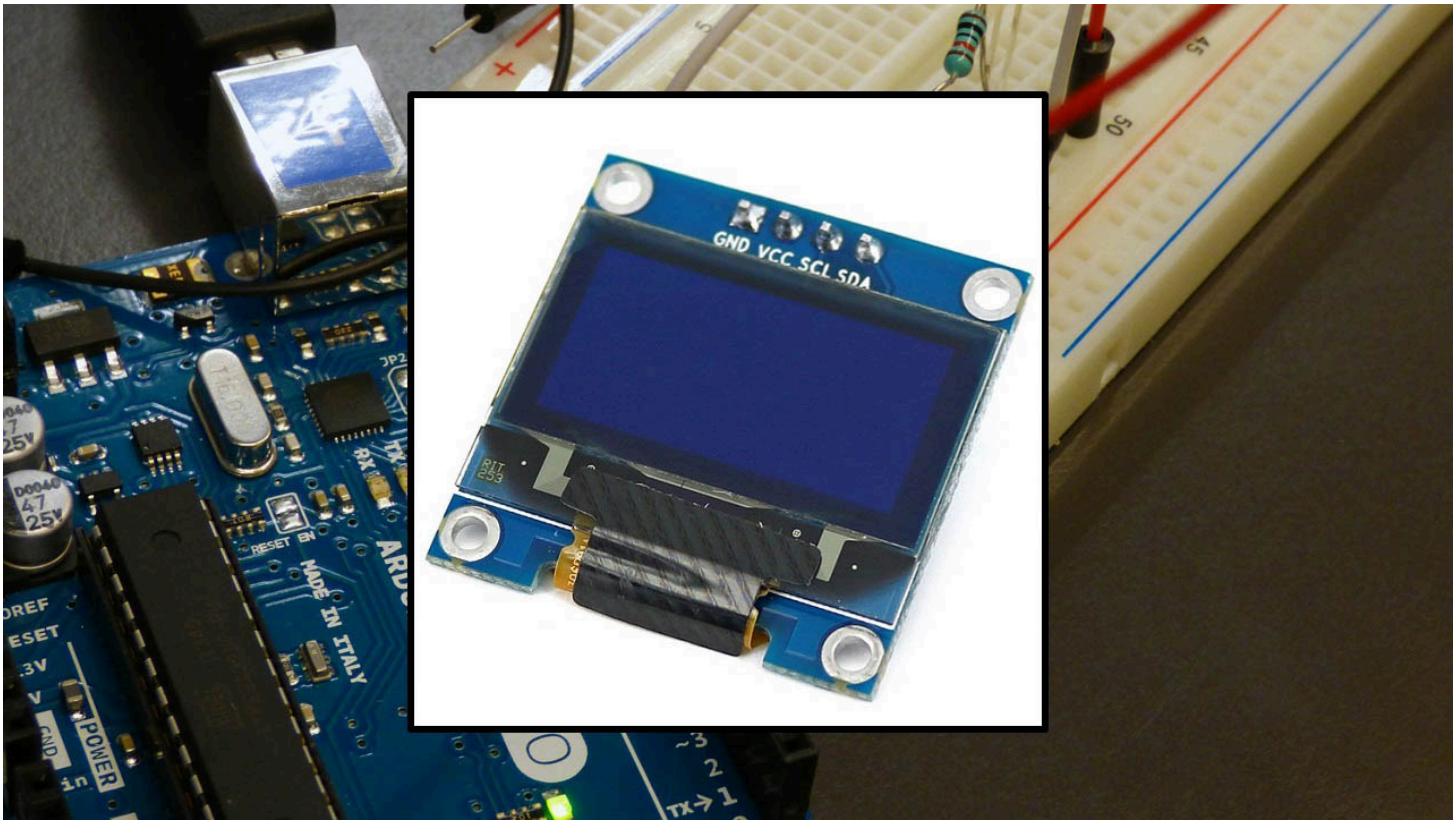
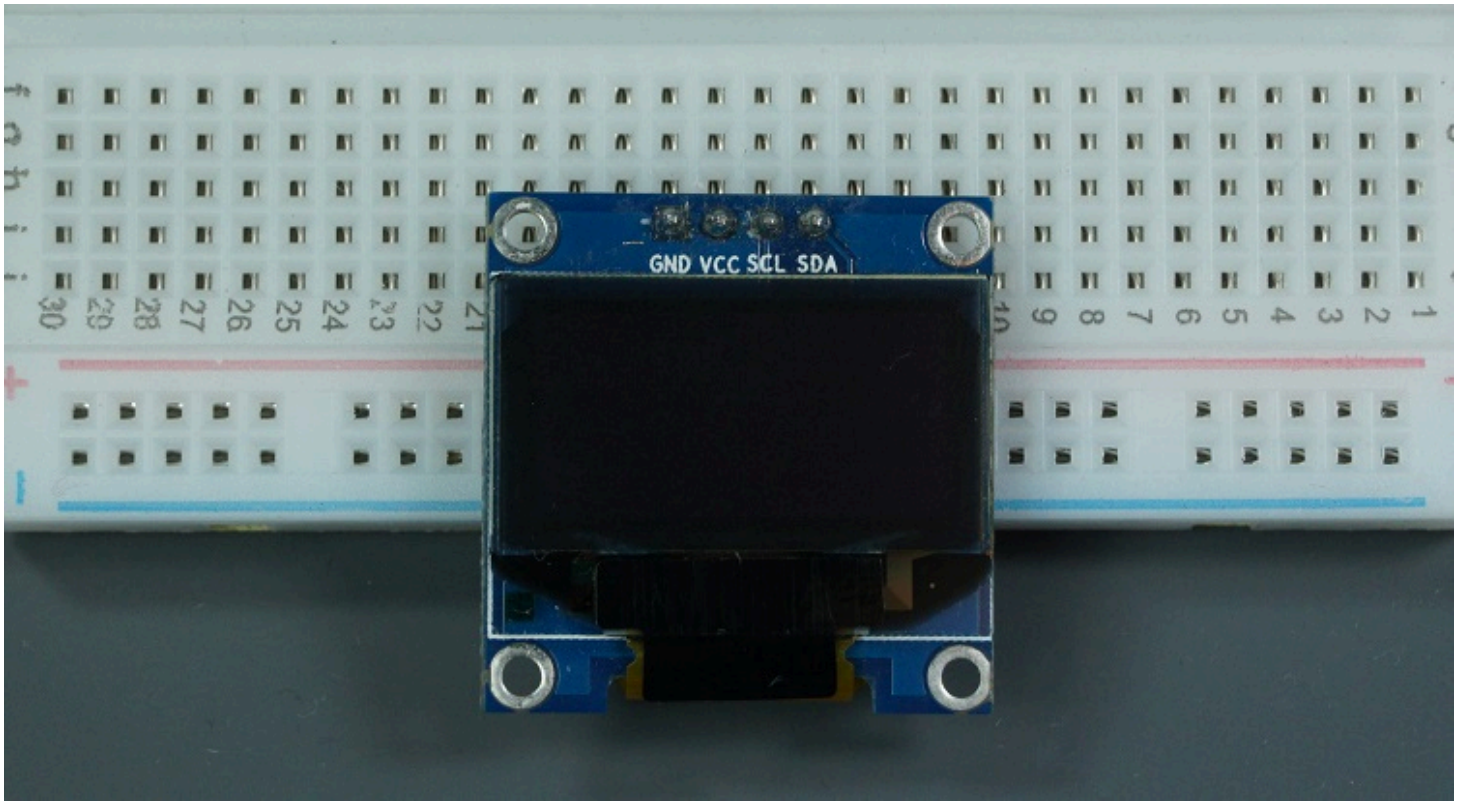
Guide for I2C OLED Display with Arduino

This article shows how to use the SSD1306 0.96 inch I2C OLED display with the Arduino. We'll show you some features of the OLED display, how to connect it to the Arduino board, and how to write text, draw shapes and display bitmap images. Lastly, we'll build a project example that displays temperature and humidity readings.



Introducing the 0.96 inch OLED display

The *organic light-emitting diode* (OLED) display that we'll use in this tutorial is the SSD1306 model: a monocolor, 0.96-inch display with 128×64 pixels as shown in the following figure.



The OLED display doesn’t require backlight, which results in a very nice contrast in dark environments. Additionally, its pixels consume energy only when they are on, so the OLED display consumes less power when compared with other displays.

The model we’re using here has only four pins and communicates with the Arduino using I2C communication protocol. There are models that come with an extra RESET pin. There are also other OLED displays that communicate using SPI communication.

Pin wiring

Because the OLED display uses I2C communication protocol, wiring is very simple. You just need to connect to the Arduino Uno I2C pins as shown in the table below.

Pin	**Wiring to Arduino Uno**
Vin	5V
GND	GND
SCL	A5
SDA	A4

If you’re using a different Arduino board, make sure you check the correct I2C pins:

- Nano: SDA (A4); SCL (A5);
- MEGA: SDA (20); SCL (21);
- Leonardo: SDA (20); SCL (21);