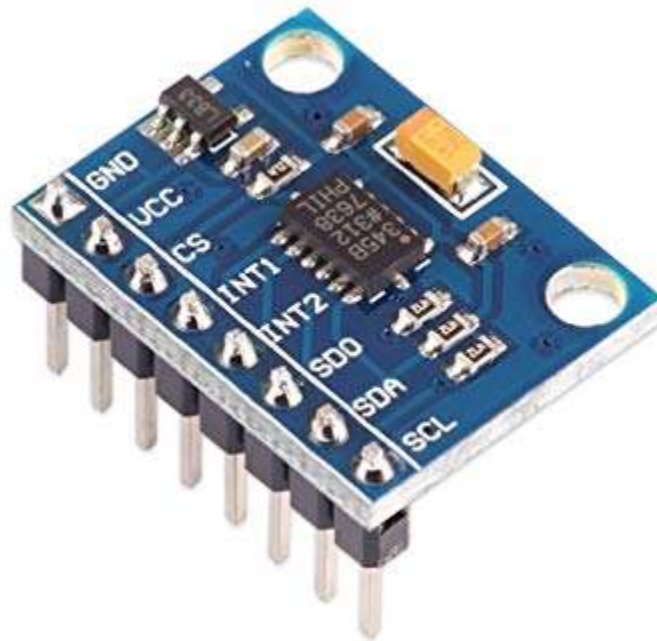
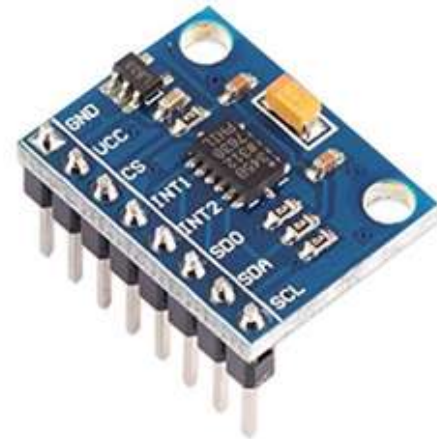


# Interfacing of ADXL345 Accelerometer



# Accelerometer(ADXL345)

- The ADXL345 is a small, thin, ultralow power, 3-axis accelerometer with high resolution (13-bit) measurement at up to  $\pm 16$  g.
- Digital output data is formatted as 16-bit two's complement and is accessible through either a SPI (3- or 4-wire) or I2C digital interface.
- The ADXL345 is well suited for mobile device applications. It measures the static acceleration of gravity in tilt-sensing applications, as well as dynamic acceleration resulting from motion or shock.



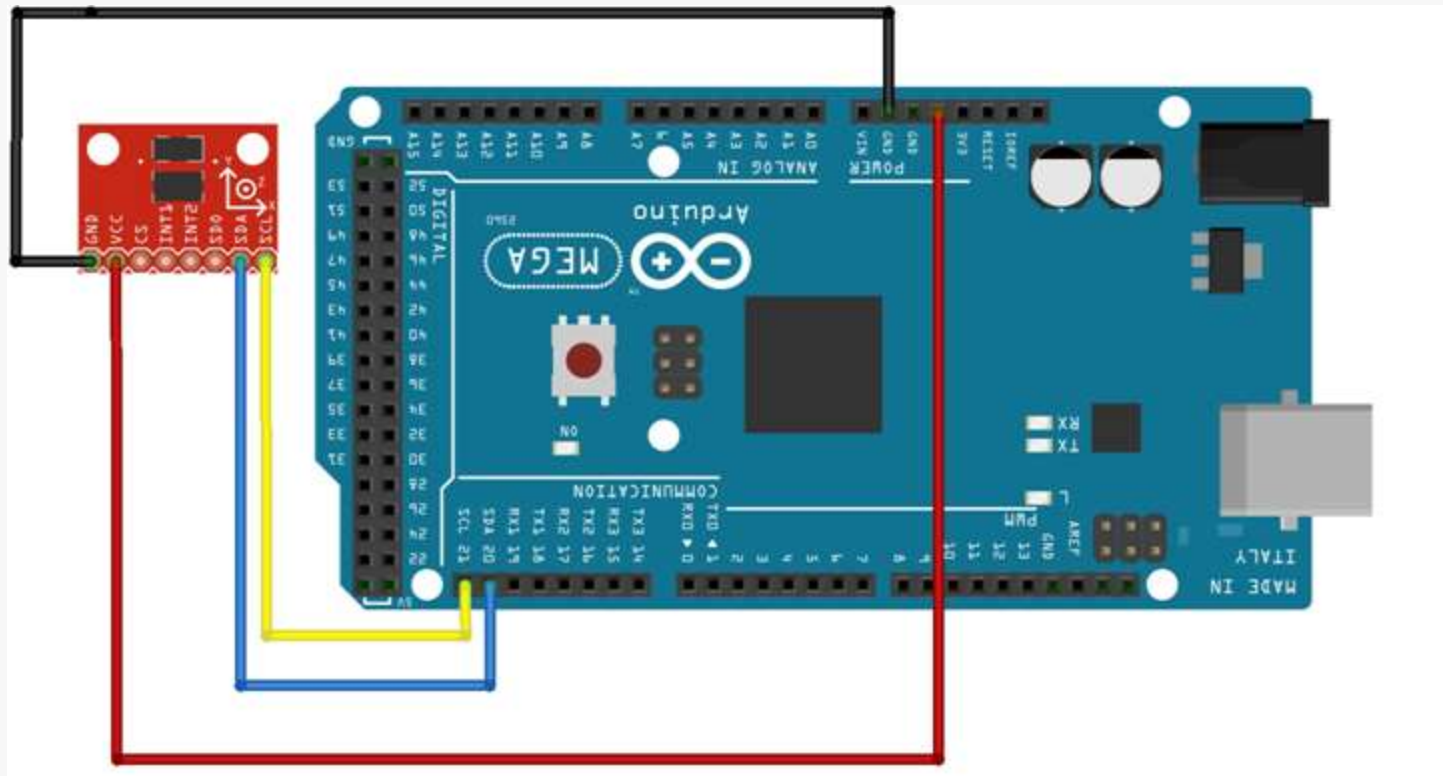
# Working of Accelerometer

- This is a 3-axis accelerometer which can measure both static and dynamic forces of acceleration.
- The unit of measurement for acceleration is meter per second squared ( $\text{m/s}^2$ ). However, accelerometer sensors usually express the measurements in “g” or gravity. One “g” is the value of the earth gravitational force which is equal to 9.8 meters per second squared.
- So, if we have an accelerometer positioned flat, with its Z-axis pointing upwards, opposite to the gravitational force, the Z-axis output of the sensor will be 1g. On the other hand, the X and Y outputs will be zero, because the gravitational force is perpendicular to these axes and doesn't affect them at all.

# Components required

- Arduino mega
- ADXL345 Accelerometer
- Jumper wires

# Connection Diagram





# Connections

1. Connect SDA pin of ADXL345 with 20 pin of Arduino.
2. Connect SCL pin of ADXL345 with 21 pin of Arduino.
3. Connect its Vcc with Arduino (+5V).
4. Connect its GND with Arduino GND.

**Project Link :** <https://youtu.be/TLrNSPZuTJM>