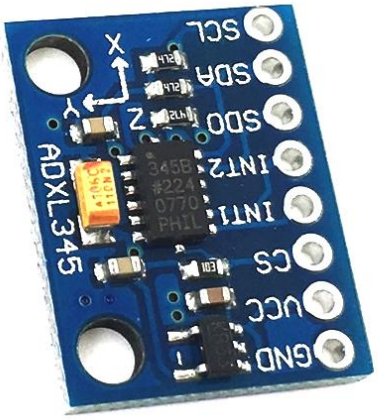
User Guide

ADXL345 Digital Accelerometer Module

ADXL345 is a low-power, 3-axis MEMS accelerometer modules with both I2C and SPI interfaces. This modules feature on-board 3.3v voltage regulation and level shifting which makes them simple to interface with 5v microcontrollers such as the Arduino. The ADXL345 features 4 sensitivity ranges from +/- 2G to +/- 16G. And it supports output data rates ranging from 10Hz to 3200Hz.



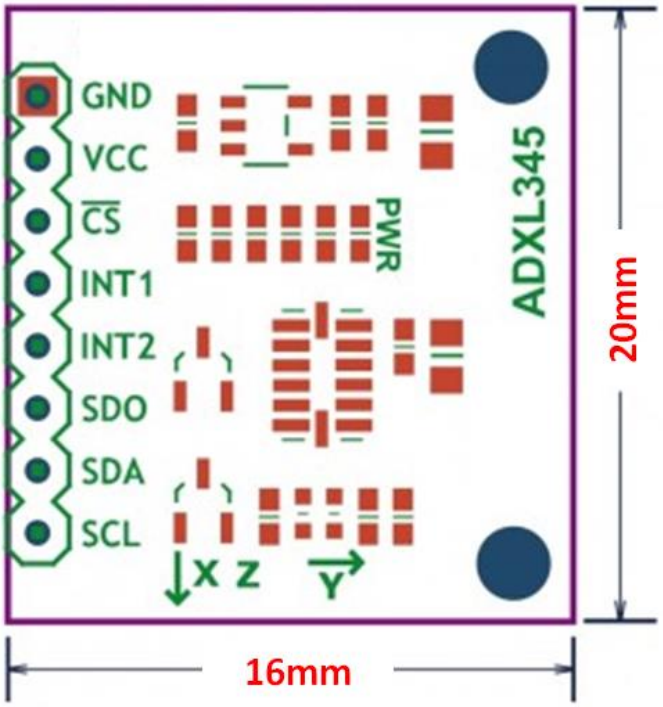
SKU: SSR1056

Brief Data:

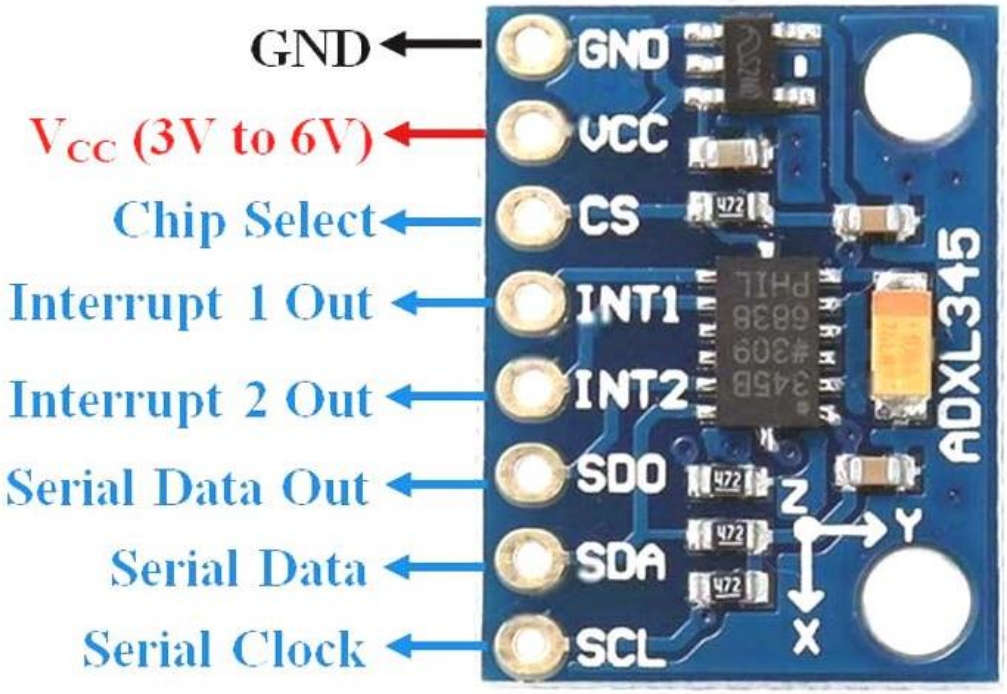
- Supply Voltage: 3~5Vdc.
- Interface Type: I^2C & SPI.
- Measurement range: +/-2g, +/-4g, +/-8g, and +/-16g.
- Output Resolution:
  - 10-bit for +/- 2g
  - 11-bit for +/- 4g.
  - 12-bit for +/- 8g.
  - 13-bit for +/- 16g.
  - Default resolution: 10-bit.
- Sensitivity:
  - ±2 g, 10-bit resolution: 256 LSB/g/.
  - ±4 g, 10-bit resolution: 128 LSB/g.
  - ±8 g, 10-bit resolution: 64LSB/g.
  - ±16g, 10-bit resolution: 32LSB/g.

Mechanical Dimension:

Unit: mm



Pin Function:



Arduino Application Examples:

I2C Wiring:

The ADXL345 module has an I2C address of 0x53. It can share the I2C bus with other I2C devices as long as each device has a unique address. Only 4 connections are required for I2C communication:

- GND->GND
- VIN->+5v
- SDA->SDA (Analog 4 on "Classic Arduinos")
- SCL->SCL (Analog 5 on "Classic Arduinos")

Install the Library:

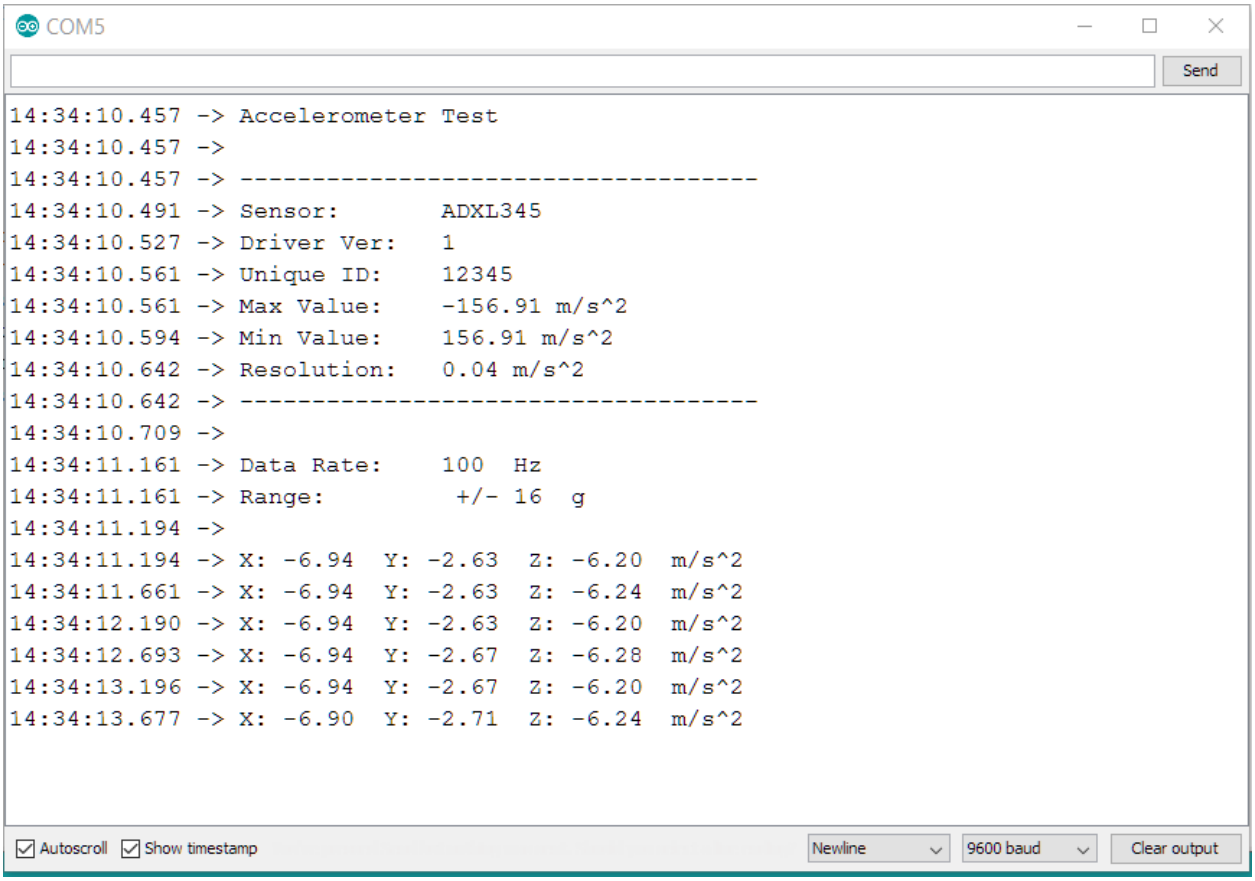
Download the ADXL345 library and install it. You will also need the Adafruit Sensor Library if you do not already have it installed.

- ADXL345 library
- Adafruit Sensor Library

Test:

Click "File->Examples->Adafruit_ADXL345->sensortest" to load the example sketch from the library.

Then click on the compile/upload button to compile and upload the sketch to the Arduino. You should see output similar to below. Watch the values change as you move the board around.



Web Resources:

- https://learn.adafruit.com/adxl345-digital-accelerometer?view=all
- https://www.engineersgarage.com/electronic-projects/adxl345-accelerometer-sensor-how-to-use/
- https://www.engineersgarage.com/electronic-projects/adxl345-accelerometer-sensor-how-to-use/
- https://www.seeedstudio.com/blog/2019/11/26/adxl356-get-started-adxl345-and-adxl335-comparison-guide/
- https://how2electronics.com/arduino-adxl345-accelerometer-interfacing-processing/

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