Grove - 3-Axis Digital Accelerometer(±1.5g) User Manual

Release date： 2015/9/22

Version： 1.0

Wiki: http://www.seeedstudio.com/wiki/Grove_-_3-Axis_Digital_Accelerometer(%C2%B11.5g)

Bazaar: http://www.seeedstudio.com/depot/Grove-3Axis-Digital-Accelerometer15g-p-765.html?cPath=25_132

Document Revision History

Revision	Date	Author	Description
1.0	Sep 22, 2015	Loovee	Create file

Contents

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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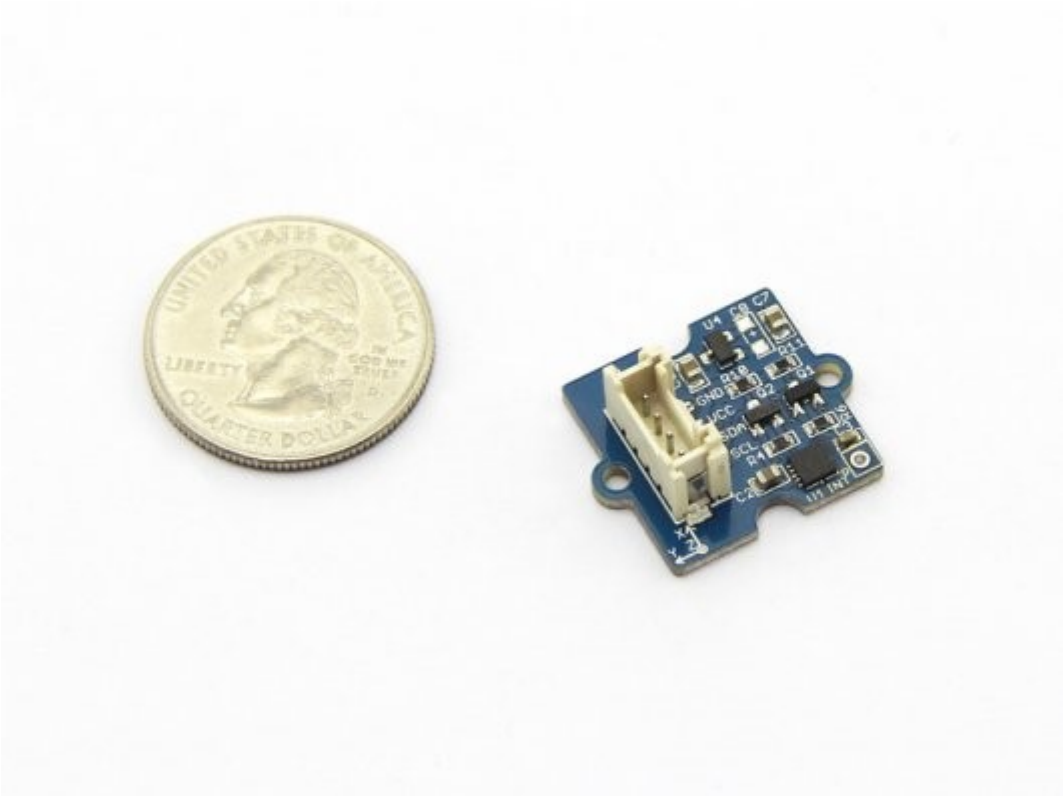
1. Introduction

3-Axis Digital Accelerometer is the key part in projects like orientation detection, gesture detection and Motion detection. This 3-Axis Digital Accelerometer(±1.5g) is based on Freescale's low power consumption module, MMA7660FC. It features up to 10,000g high shock survivability and configurable Samples per Second rate. For generous applications that don't require too large measurement range, this is a great choice because it's durable, energy saving and cost-efficient.



2. Specifications

- Working voltage: 3.0 - 5.5V
- Off Mode Current: 0.4 μA
- Standby Mode Current: 2 μA
- Active Mode Current: 47 μA at 1 ODR
- Test Range: ±1.5g
- Sensitivity: 21LSB/g
- Suli-compatible Library

3. Demonstration

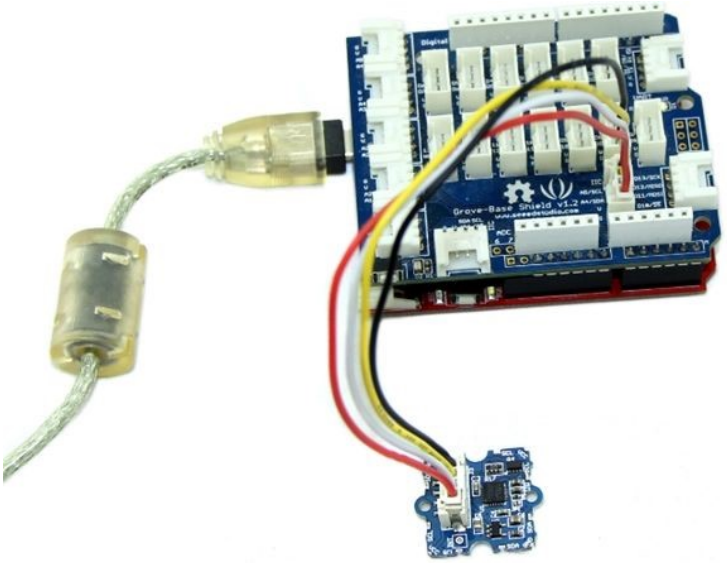
3.1 With Arduino

Here we are going to show you how to get raw data and data measured by "g" from this sensor.

Connect this module to the I2C port of Grove - Base Shield via a Grove cable.

Note:

If you want to activate the Interrupt function of this module, you need to connect the INT soldering pad we broke out on the board with a pin of Arduino that's capable of Interrupt Service Routine.



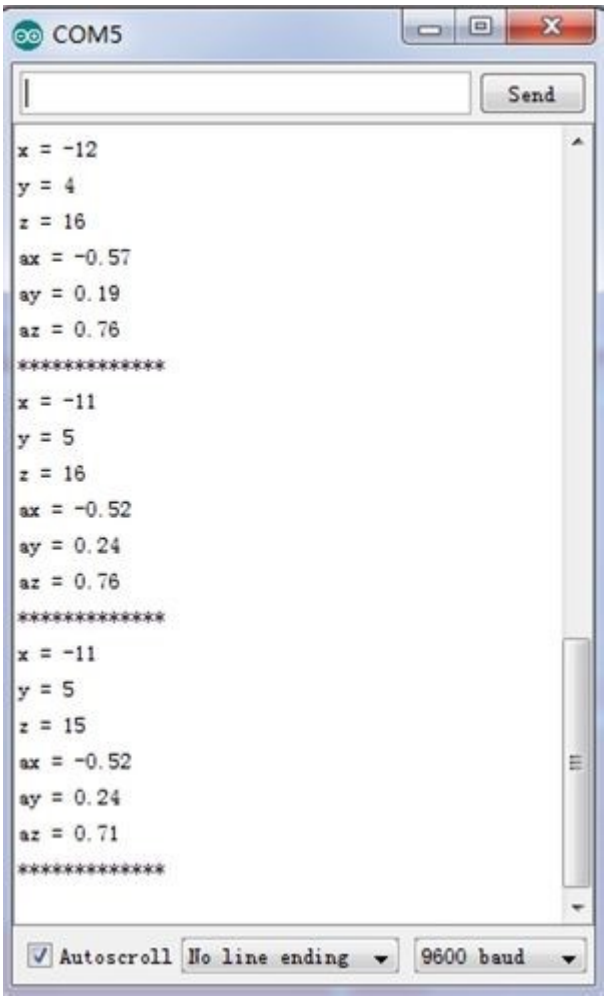
Install the library we provide in the "Resources" section.

Open the code directly by the path:

File -> Example ->DigitalAccelerometer_MMA7660FC ->MMA7660FC_Demo.

In this program, acceleration information are sent from the sensor to Seeeduino via I2C bus and then Seeeduino printed them onto the serial monitor.

Open the serial monitor to check the result.



The outputs of this sensor consist of two parts: raw data and 3-axis acceleration info converted into the unit of gravity, "g".

3.2 With Raspberry Pi

1. You should have got a raspberry pi and a grovepi or grovepi+.

2. You should have completed configuring the development enviroment, otherwise follow here.

3. Connection

- Plug the sensor to grovepi socket i2c-x(1~3) by using a grove cable.

4. Navigate to the demos' directory:

```
cd yourpath/GrovePi/Software/Python/
```

- To see the code

```
nano grove_i2c_accelerometer.py   # "Ctrl+x" to exit #
import time
```

```
import grovepi

# Connect the Grove Accelerometer (+/- 1.5g) to any I2C port eg. I2C-1
# Can be found at I2C address 0x4c
# SCL,SDA,VCC,GND

while True:
    try:
        print grovepi.acc_xyz()
        time.sleep(.5)

    except IOError:
        print "Error"
```

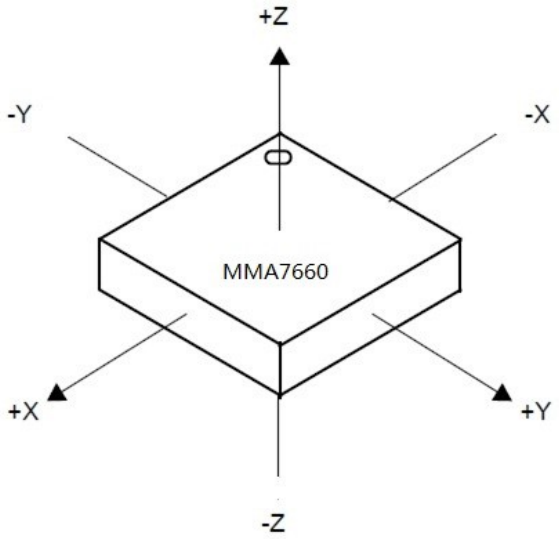
5. Run the demo.

```
   sudo python grove_i2c_accelerometer.py
```

4. Reference

Below are two figures helping you understand the physical meaning of the result.

The first figure is about the direction of each axis:



The second figure gives some examples:

5. Resources

- Datasheet of MMA7660FC.
- Grove - 3-Axis Digital Accelerometer Eagle File
- DigitalAccelerometer_MMA7660FC Library
- github repository for 3-Axis Digital Accelerometer(±1.5g)

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

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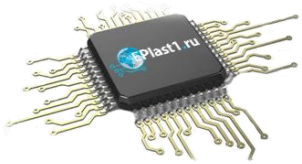
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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