



Grove - 3-Axis Digital Accelerometer($\pm 400g$)

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Version : 1.0

Wiki: [http://www.seeedstudio.com/wiki/Grove - 3-Axis Digital Accelerometer\(\$\pm 400g\$ \)](http://www.seeedstudio.com/wiki/Grove_-_3-Axis_Digital_Accelerometer(%C2%B1400g))

Bazaar: http://www.seeedstudio.com/depot/Grove-3Axis-Digital-Accelerometer400g-p-1897.html?cPath=25_132

Document Revision History

Revision	Date	Author	Description
1.0	Sep 21, 2015	Victor.He	Create file

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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.

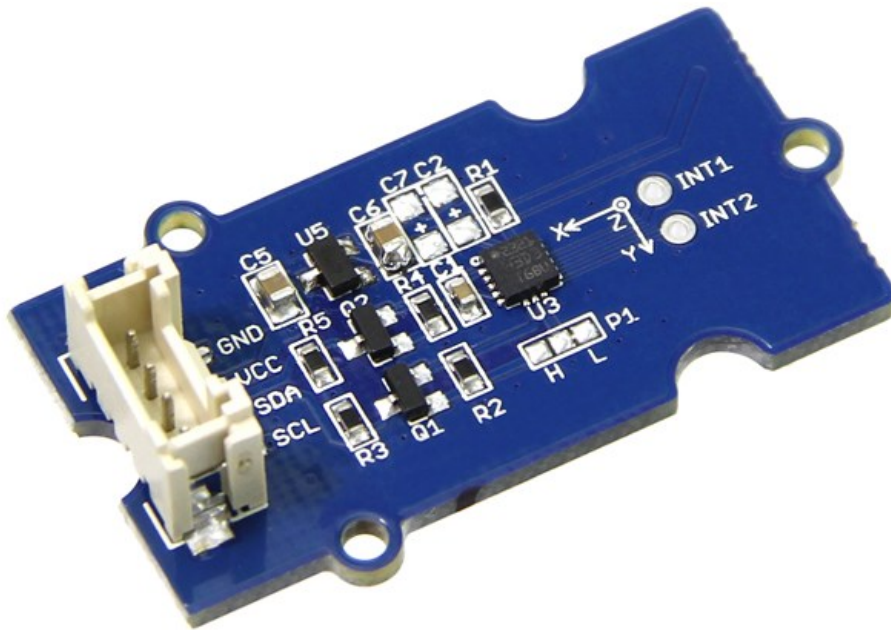
Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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1. Introduction

The H3LIS331DL is a low power high performance 3-axis linear accelerometer belonging to the “nano” family, with digital I2C serial interface standard output. The device features ultra low power operational modes that allow advanced power saving and smart sleep to wake-up functions. The H3LIS331DL has dynamically user selectable full scales of $\pm 100g/\pm 200g/\pm 400g$ and it is capable of measuring accelerations with output data rates from 0.5 Hz to 1 kHz.



2. Features

- Wide power range DC3.3V to 5V
- Grove outline
- 3 axis sensing
- Small, low-profile package: 3×3×1mm TFLGA
- Low power 300μA at 3.3V (typical)
- ±100g /±200 g /±400 g dynamically selectable full scale
- I2C digital output interface
- 10000 g high shock survivability
- ECOPACK®RoHS and “Green” compliant

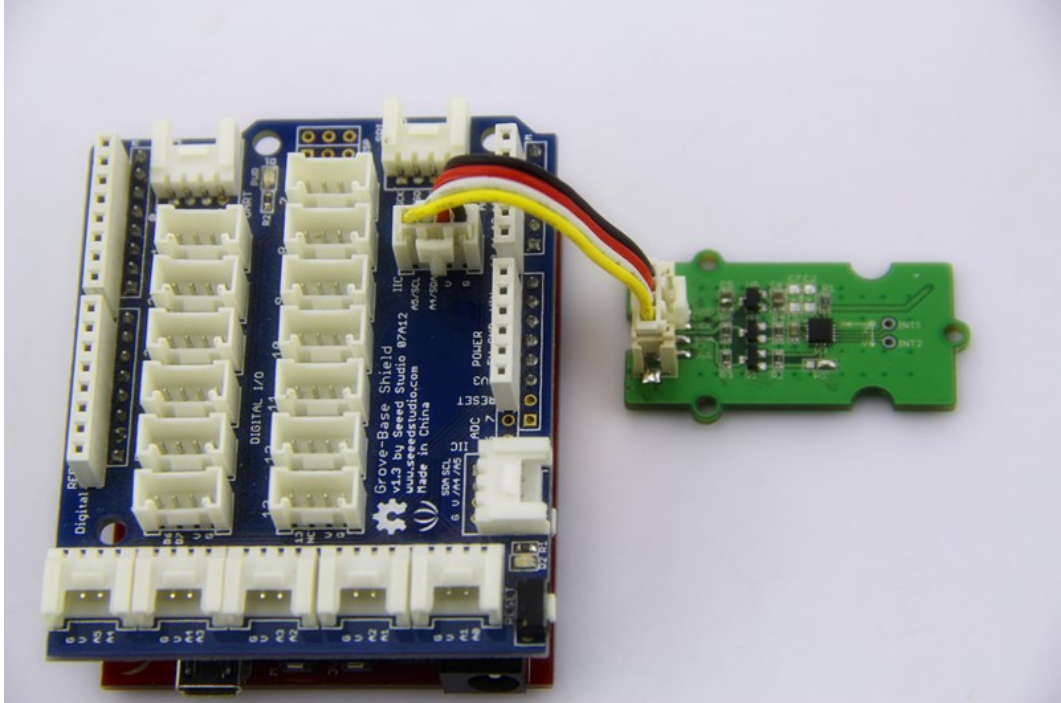
3. Application ideas

- Shock detector
- Impact recognition and logging
- Concussion detection

4. Usage

Here below we show you how to read the raw data from this accelerometer.

1. Plug it onto the I2C port of your [Grove - Base Shield](#).



2. Download the [Digital Accelerometer\(±400g\) Library .zip](#) and unpack it into arduino-1.0\libraries in your Arduino installation folder.
3. Open the demo code directly by the path:File -> Example ->Grove_3Axis_Digital_Accelerometer_H3LIS331DL->H3LIS331DL_AdjVal.It is a sketch to adjust the raw data of H3LIS331DL to make it more precise.
4. Upload the code and open the serial monitor. Please click [here](#) if you do not know how to upload.
5. Open the serial monitor to get the adjust value of reference as the steps described in serial output.

```
adjust value of X axis is 351
adjust value of y axis is 169
adjust value of z axis is 224
note: these data can be used in H3LISDL_Demo sketch
```

6. Open the demo code directly by the path: File -> Example ->Grove_3Axis_Digital_Accelerometer_H3LIS331DL->H3LIS331DL_Demo.then modify the VAL_X_AXIS/VAL_Y_AXIS/VAL_Z_AXIS according to what you get from H3LIS331DL_AdjVal Sketch.


```
//please get these value by running H3LIS331DL_AdjVal Sketch.  
#define VAL_X_AXIS 351  
#define VAL_Y_AXIS 169  
#define VAL_Z_AXIS 224
```

7. Upload the code and open the serial monitor and open the serial monitor to check the result.

```
x, y, z = -159 -41 480  
accelerate of x, y, z = -0.43 0.07 1.78  
x, y, z = -95 -25 448  
accelerate of x, y, z = -0.28 -0.08 1.34  
x, y, z = -351 23 512  
accelerate of x, y, z = -0.33 0.07 1.54  
x, y, z = -143 55 608  
accelerate of x, y, z = -0.38 -0.22 1.44  
x, y, z = -159 103 560  
accelerate of x, y, z = -0.48 0.31 1.68  
x, y, z = -127 23 592  
accelerate of x, y, z = -0.52 -0.08 1.78  
x, y, z = -111 7 544  
accelerate of x, y, z = -0.33 -0.12 1.63  
x, y, z = -127 7 528  
accelerate of x, y, z = -0.38 0.02 1.58  
x, y, z = -111 23 544  
accelerate of x, y, z = -0.48 0.07 1.63  
x, y, z = -159 -25 528
```

5. Resources

[Grove - 3-Axis Digital Accelerometer\(\$\pm 400g\$ \) Eagle File](#)

[github repository for 3-Axis Digital Accelerometer\(\$\pm 400g\$ \)](#)

[H3LIS331DL Datasheet PDF](#)

6. Support

If you have questions or other better design ideas, you can go to our [forum](#) or [wish](#) to discuss.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

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- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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