



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Triple Axis Accelerometer BMA220(Tiny) SKU:SEN0168



Analog Gas Sensor(MQ2) SKU : SEN0127

Contents

- 1 Introduction
- 2 Specification
- 3 Connecting Diagram
- 4 Sample Code

Introduction

This Triple Axis Accelerometer with Bosch BMA220 is an ultra small triaxial, low-g acceleration sensor breakboard with I2C interface, aiming for lowpower consumer market applications. It allows measurement of accelerations in 3 perpendicular axes and thus senses tilt, motion, shock and vibration in cell phones, handhelds, computer peripherals, man-machine interfaces, virtual reality features and game controllers.

With a size of only 2 mm x 2 mm, the Bosch BMA220 represents a new generation of acceleration sensors. The Tri-Axis Accelerometer integrates a multitude of features that acilitates its use especially in the area of motion detection applications, such as device orientation detection, gaming, HMI and menu browser control. It is highly configurable in order to give the designer full flexibility when integrating the sensor into his system.

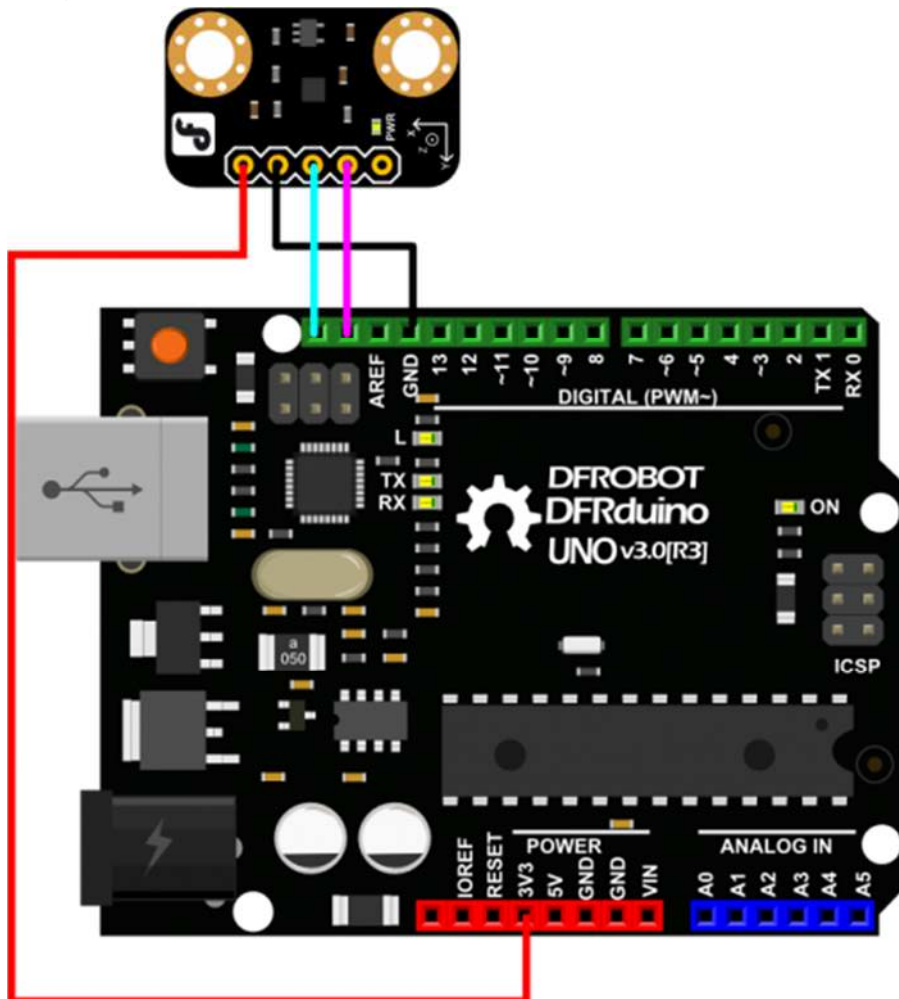
It can be used in sensing tilt, motion and shock vibrati

By the way, we have collected some useful 3-axis data processing methods: How to Use a Three-Axis Accelerometer for Tilt Sensing.

Specification

- Power supply: 2.0-3.6V
- Interface: I2C
- Acceleration range: $\pm 2g/\pm 4g/\pm 8g/\pm 16g$
- Ultra Low Power
- LED power indication
- Tiny size design and easy-to-use
- Compatible with Arduino controllers
- Size: 13x22mm

Connecting Diagram



Sample Code

```
#include <Wire.h>
byte Version[3];
int8_t x_data;
int8_t y_data;
int8_t z_data;
byte range=0x00;
float divi=16;
float x,y,z;
void setup()
{
  Serial.begin(9600);
  Wire.begin();
  Wire.beginTransmission(0x0A); // address of the accelerometer
  // range settings
  Wire.write(0x22); //register address
  Wire.write(range); //can be set at"0x00""0x01""0x02""0x03", refer to Datasheet on wiki
  // low pass filter
  Wire.write(0x20); //register address
  Wire.write(0x05); //can be set at"0x05""0x04"....."0x01""0x00", refer to Datasheet on wiki
  Wire.endTransmission();
}

void AccelerometerInit()
{
  Wire.beginTransmission(0x0A); // address of the accelerometer
  // reset the accelerometer
  Wire.write(0x04); // Y data
  Wire.endTransmission();
  Wire.requestFrom(0x0A,1); // request 6 bytes from slave device #2
  while(Wire.available()) // slave may send less than requested
  {
```

```

    Version[0] = Wire.read(); // receive a byte as characte
}
x_data=(int8_t)Version[0]>>2;

Wire.beginTransmission(0x0A); // address of the accelerometer
// reset the accelerometer
Wire.write(0x06); // Y data
Wire.endTransmission();
Wire.requestFrom(0x0A,1);    // request 6 bytes from slave device #2
while(Wire.available())    // slave may send less than requested
{
    Version[1] = Wire.read(); // receive a byte as characte
}
y_data=(int8_t)Version[1]>>2;

Wire.beginTransmission(0x0A); // address of the accelerometer
// reset the accelerometer
Wire.write(0x08); // Y data
Wire.endTransmission();
Wire.requestFrom(0x0A,1);    // request 6 bytes from slave device #2
while(Wire.available())    // slave may send less than requested
{
    Version[2] = Wire.read(); // receive a byte as characte
}
z_data=(int8_t)Version[2]>>2;

x=(float)x_data/divi;
y=(float)y_data/divi;
z=(float)z_data/divi;
Serial.print("X=");
Serial.print(x);           // print the character
Serial.print(" ");
Serial.print("Y=");

```

```
    Serial.print(y);          // print the character
    Serial.print(" ");
    Serial.print("Z=");      // print the character
    Serial.println(z);
}

void loop()
{
    switch(range) //change the data dealing method based on the range u've set
    {
        case 0x00:divi=16; break;
        case 0x01:divi=8; break;
        case 0x02:divi=4; break;
        case 0x03:divi=2; break;
        default: Serial.println("range setting is Wrong,range:from 0to 3.Please check!");while(1);
    }
    AccelerometerInit();
    delay(100);
}
```