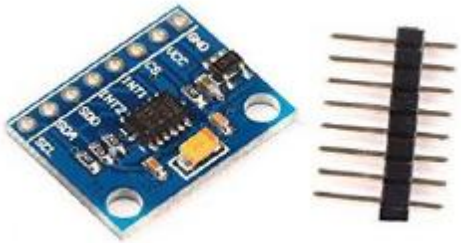
ADXL345

Overview



This lesson will teach you how to use the ADXL345 module, and display the three axis data on the LCD.

Specification

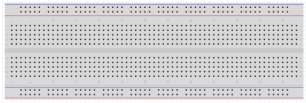
Please view "ADXL345.pdf"

Path: \Public_materials\Datasheet\ ADXL345.pdf

Pin definition

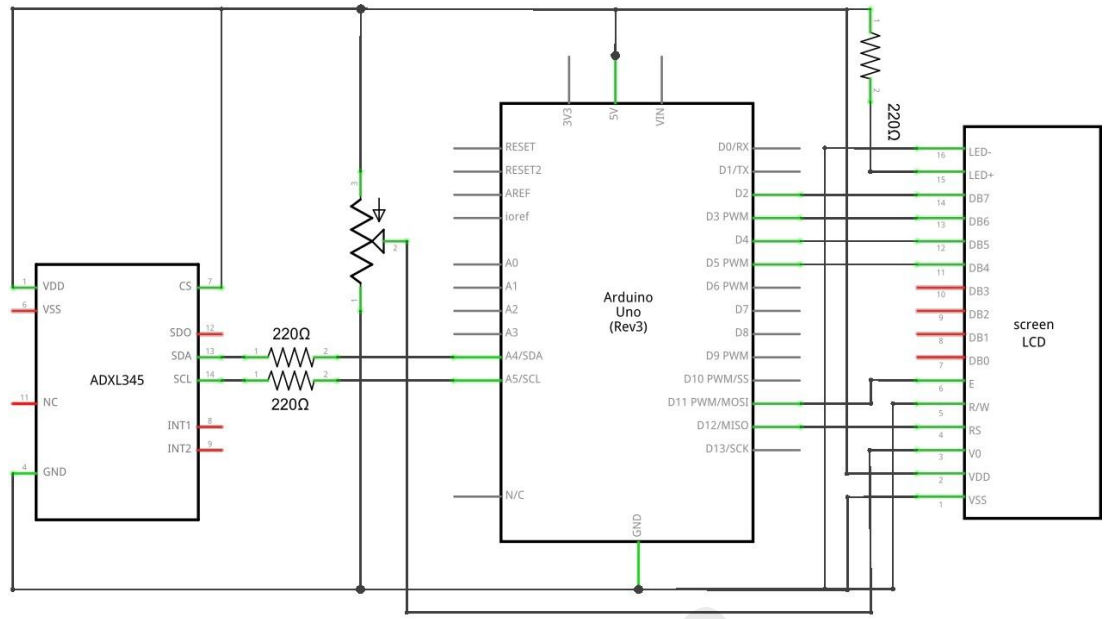
ADXL345	Arduino
GND	->GND
VCC	->+5V
CS	->+5V
INT1	->null
INT2	->null
SDO	->null
SDA	->A4
SCL	->A5

Hardware required

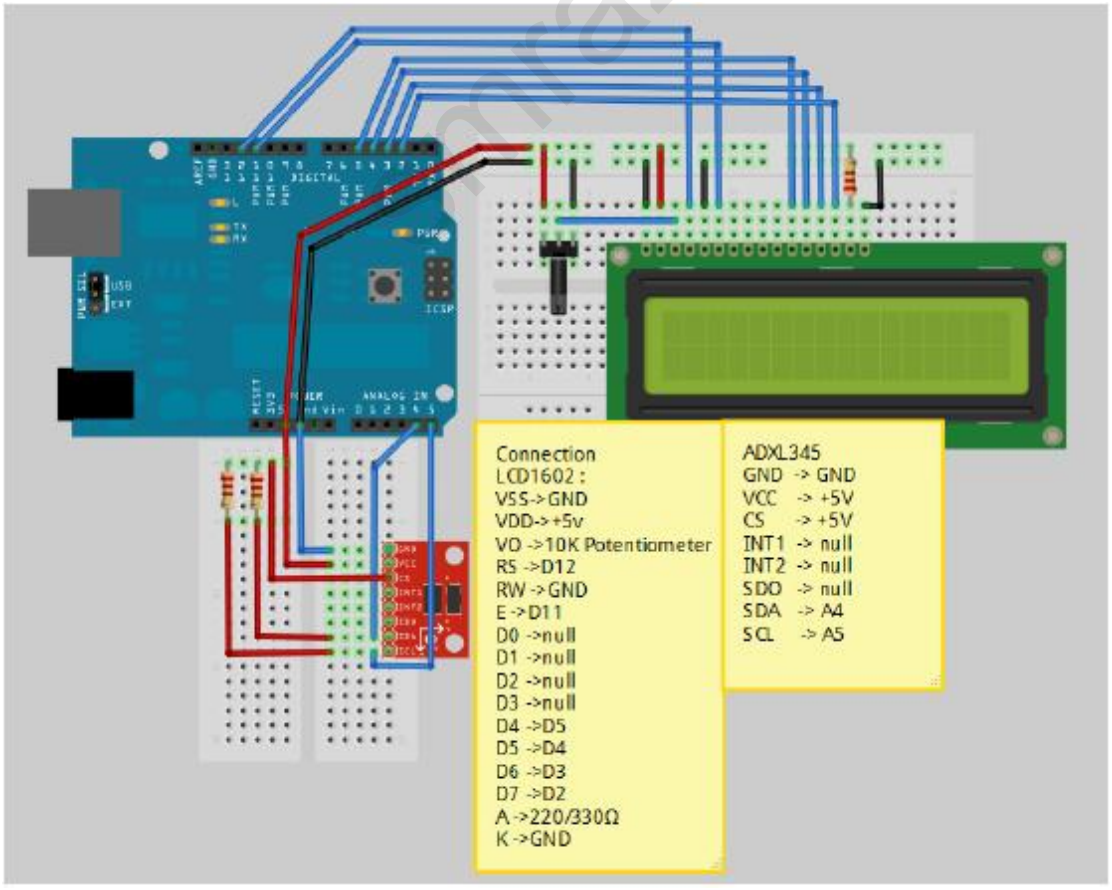
Material diagram	Material name	Number
	ADXL345	1
	220/330Ω resistor	3
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

Connection

Schematic



Connection diagram



Note： The middle pin of the potentiometer is connected to the LCD1602 port VO.

Sample code

Note: sample code under the **Sample code** folder

```
#include <Wire.h>
#include <LiquidCrystal.h>
#define Register_ID 0    //Configuration Register Address
#define Register_2D 0x2D
#define Register_X0 0x32
#define Register_X1 0x33
#define Register_Y0 0x34
#define Register_Y1 0x35
#define Register_Z0 0x36
#define Register_Z1 0x37

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);//LCD pin

int ADXAddress = 0xA7>>1; //Converted into 7-bit address
int reading = 0;
int val = 0;
int X0,X1,X_out;
int Y0,Y1,Y_out;
int Z1,Z0,Z_out;
double Xg,Yg,Zg;

void setup()
{
    lcd.begin(16, 2); //Initialization LCD
    delay(100);
    Wire.begin(); //Initialization IIC
    delay(100);
    Wire.beginTransmission(ADXAddress);
    Wire.write(Register_2D);
    Wire.write(8);
    Wire.endTransmission();
    lcd.print(" Welcome to ");
    lcd.setCursor(0,1);
    lcd.print("      Smraza");
    delay(2000);
    lcd.clear();
}

void loop()
{
    Wire.beginTransmission(ADXAddress);
    Wire.write(Register_X0);
    Wire.write(Register_X1);
    Wire.endTransmission();
```

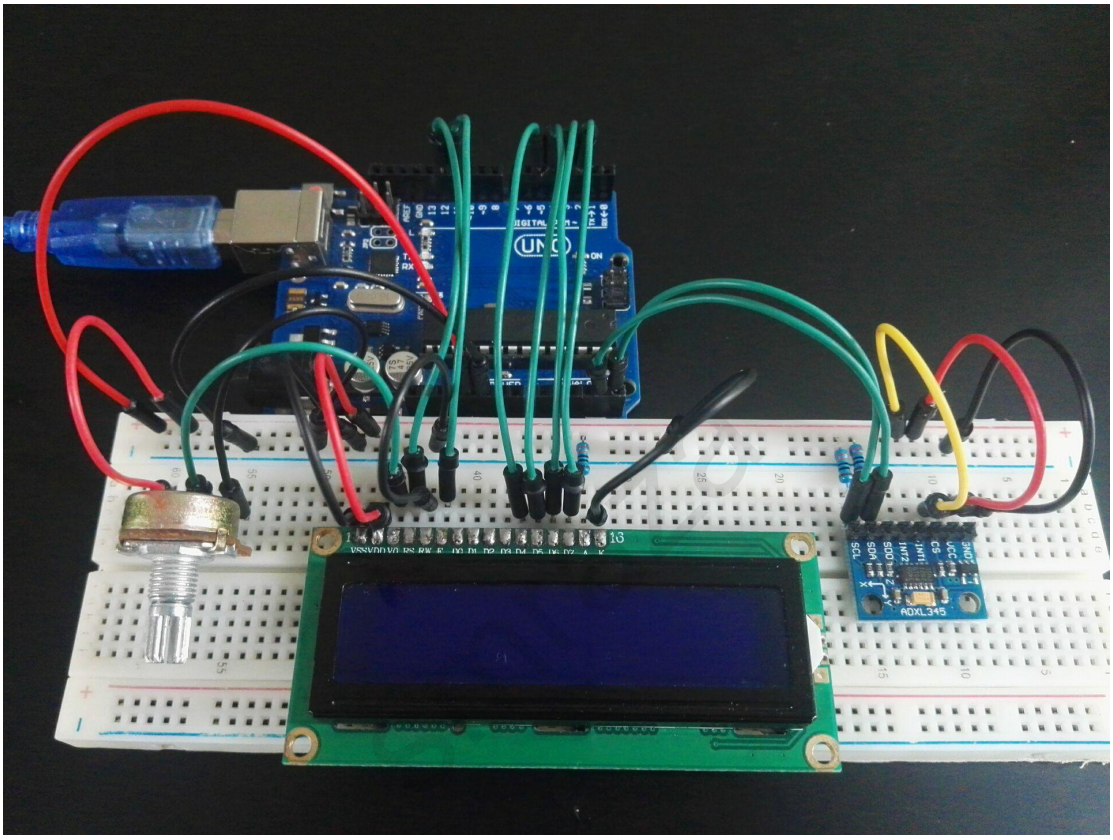
```
Wire.requestFrom(ADXAddress,2);
if(Wire.available()<=2);
{
    X0 = Wire.read();
    X1 = Wire.read();
    X1 = X1<<8;
    X_out = X0+X1;
}
Wire.beginTransmission(ADXAddress);
Wire.write(Register_Y0);
Wire.write(Register_Y1);
Wire.endTransmission();
Wire.requestFrom(ADXAddress,2);
if(Wire.available()<=2);
{
    Y0 = Wire.read();
    Y1 = Wire.read();
    Y1 = Y1<<8;
    Y_out = Y0+Y1;
}

Wire.beginTransmission(ADXAddress);
Wire.write(Register_Z0);
Wire.write(Register_Z1);
Wire.endTransmission();
Wire.requestFrom(ADXAddress,2);
if(Wire.available()<=2);
{
    Z0 = Wire.read();
    Z1 = Wire.read();
    Z1 = Z1<<8;
    Z_out = Z0+Z1;
}

Xg = X_out/256.00;
Yg = Y_out/256.00;
Zg = Z_out/256.00;
lcd.clear();
lcd.print("X=");
lcd.print(Xg);
lcd.setCursor(8, 0);
lcd.print("Y=");
lcd.print(Yg);
lcd.setCursor(0, 1);
lcd.print("Z=");
```

```
    lcd.print(Zg);
    lcd.setCursor(10, 1);
    lcd.print("Smraza");
    delay(300); //Delay 0.3 seconds, the refresh rate is adjusted here
}
```

Example picture



Language reference

Tips：click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.

wire
wire.write
wire.read
WireEndTransmission
WireAvailable
WireRequestFrom
WireBeginTransmission
WireBegin
WireSend
WireReceive

Application effect

By turning the ADXL345 module, the data displayed on the LCD will be changed.

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