

GY-302 BH1750 Digital Light Intensity Module



Features

1. Type: GY-302;
2. Size: 13.9mm x 18.5mm;
3. ROHM original package BH1750FVI chip;
4. Power Supply: 3~5V;
5. Date Range: 0~65535;
6. Sensor build-in 16-bit AD converter;
7. Direct digital output, omit complex calculations and calibration;
8. No ambient light distinction;
9. Dichroism close to visual sensitivity;
10. High precision determination accurate to 1 Lu for different lights.

Introduction of Pins

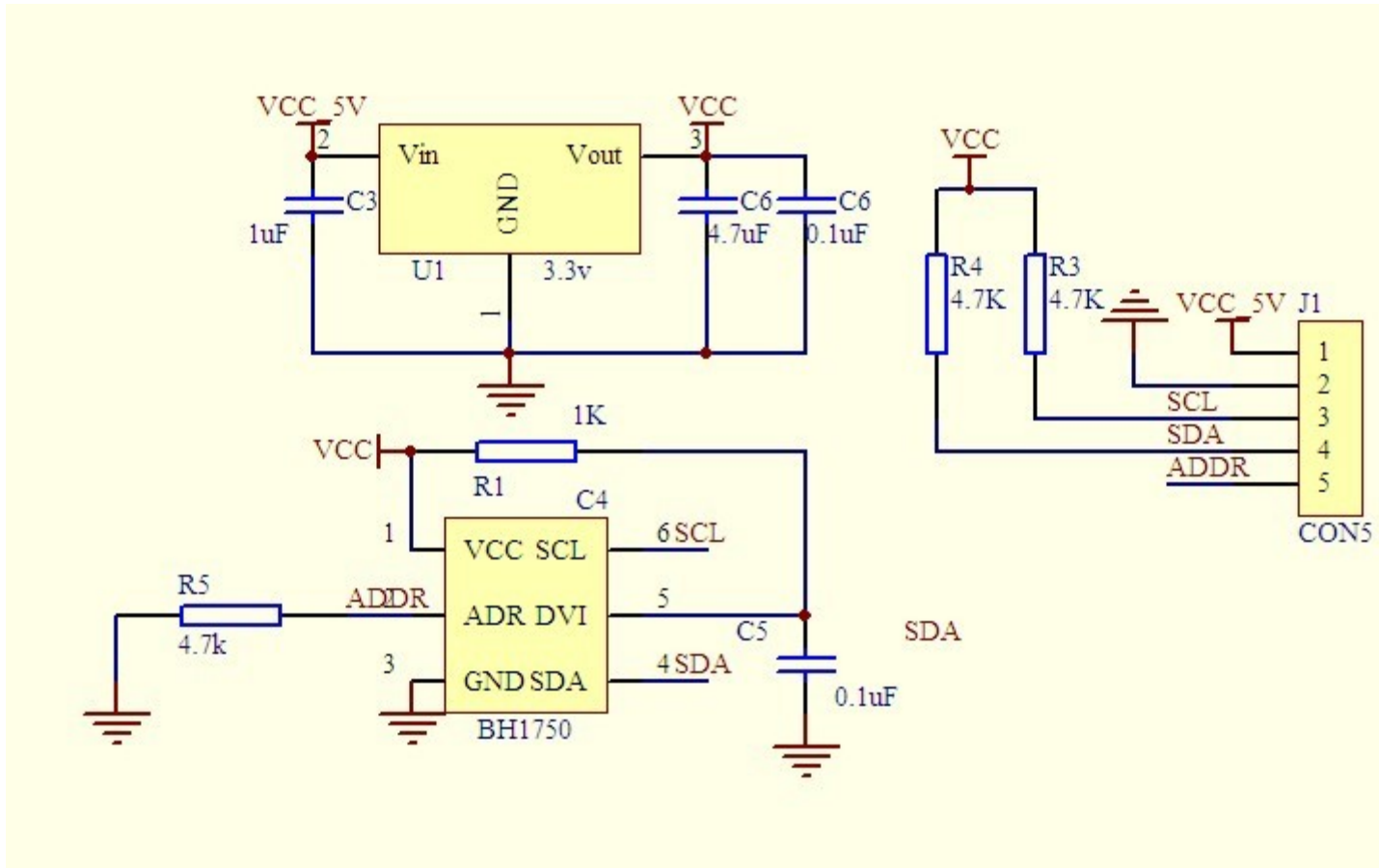
Introduction of Pins	
GND	Cathode of power supply.
VCC	Anode of power supply connected to 3~5V.
SCL	I ² C clock
SDA	I ² C data
ADDR	IIC address pin

Principle

BH1750FVI is possible to change sensor sensitivity. And it is possible to cancel the optical window influence by changing sensor sensitivity from default to 2 times.

Sensor sensitivity is shifted by changing the value of MTreg (measurement time register). MTreg value has to set 2 times if target of sensor sensitivity is 2 times. Measurement time is also set 2 times when MTreg value is changed from default to 2 times.

Procedure for changing target sensor sensitivity to 2 times.
Please change Mtreg from "0100_01010" (default) to "1000_1010" (default * 2).



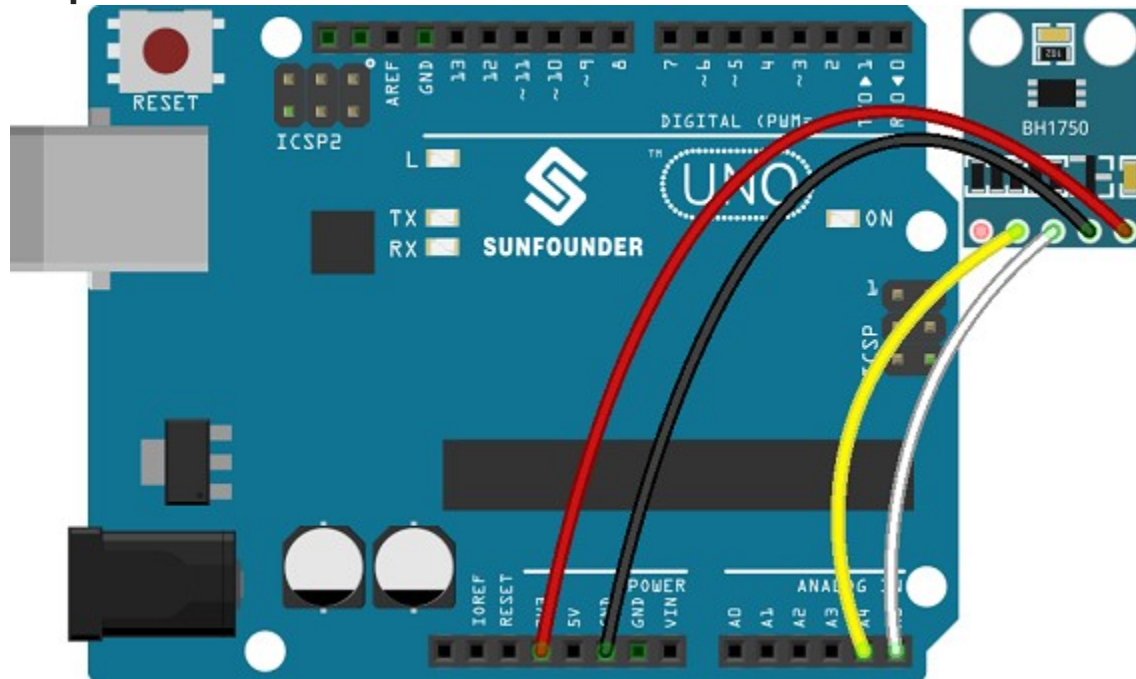
Experimental Procedures for Arduino

Step 1: Connect the circuit:

GY-302	Sunfounder Uno
VCC	VCC
GND	GND
SDA	A4

SCL	A5
ADDR	

Step 1: Connect the circuit:



Step 2: Compile and upload the code.

```
/*  
  Sample code for the BH1750 Light sensor  
  
  Connection:  
  VCC-5v  
  GND-GND  
  SCL-SCL(analog pin 5)  
  SDA-SDA(analog pin 4)  
  ADD-NC  
  */  
#include <Wire.h> //BH1750 IIC Mode  
#include <math.h>
```

```

int BH1750address = 0x23; //setting i2c address

byte buff[2];
void setup()
{
  Wire.begin();
  Serial.begin(57600); //init Serial rate
}

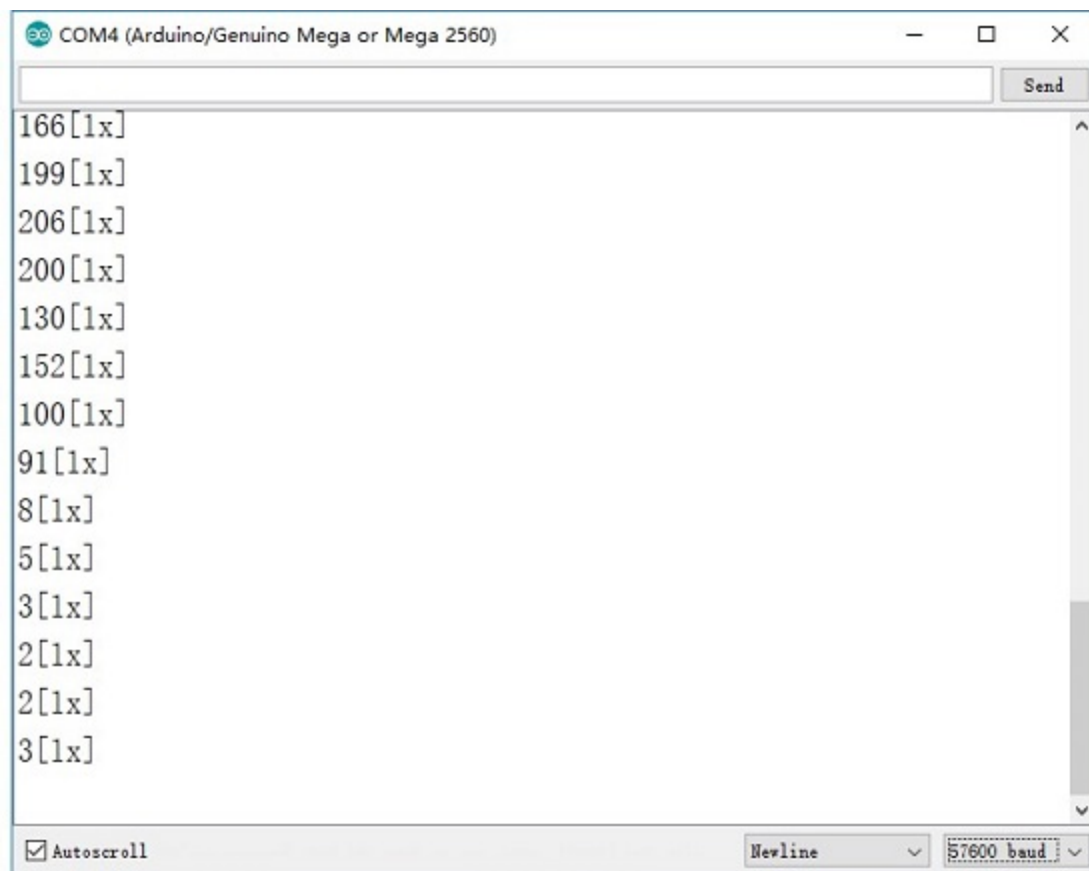
void loop()
{
  int i;
  uint16_t val=0;
  BH1750_Init(BH1750address);
  delay(200);

  if(2==BH1750_Read(BH1750address))
  {
    val=((buff[0]<<8)|buff[1])/1.2;
    Serial.print(val,DEC);
    Serial.println("[lx]");
  }
  delay(150);
}

int BH1750_Read(int address) //
{
  int i=0;
  Wire.beginTransmission(address);
  Wire.requestFrom(address, 2);
  while(Wire.available()) //
  {
    buff[i] = Wire.read(); // receive one byte
    i++;
  }
  Wire.endTransmission();
  return i;
}

```

```
}  
  
void BH1750_Init(int address)  
{  
  Wire.beginTransmission(address);  
  Wire.write(0x10); // 1lx resolution 120ms  
  Wire.endTransmission();  
}
```



The screenshot shows a serial monitor window titled "COM4 (Arduino/Genuino Mega or Mega 2560)". The window contains a list of sensor readings, each followed by "[1x]". The readings are: 166, 199, 206, 200, 130, 152, 100, 91, 8, 5, 3, 2, 2, and 3. At the bottom of the window, there are three controls: a checked "Autoscroll" checkbox, a "Newline" dropdown menu, and a "57600 baud" dropdown menu. A "Send" button is located at the top right of the text area.

```
166[1x]  
199[1x]  
206[1x]  
200[1x]  
130[1x]  
152[1x]  
100[1x]  
91[1x]  
8[1x]  
5[1x]  
3[1x]  
2[1x]  
2[1x]  
3[1x]
```