# BH1790GLC-EVK-001 Manual

Feb/07/2017
Sensor Application G

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# Preparation

- Arduino Uno 1pcs
- Personal Computer installed Arduino IDE 1pcs
  - Requirement : Arduino 1.6.7 later
  - Please use Arduino IDE downloaded from http://www.arduino.cc/
- USB cable for connecting Arduino and PC 1pcs
- SensorShield-EVK-001 1pcs
- BH1790GLC-EVK-001 1pcs

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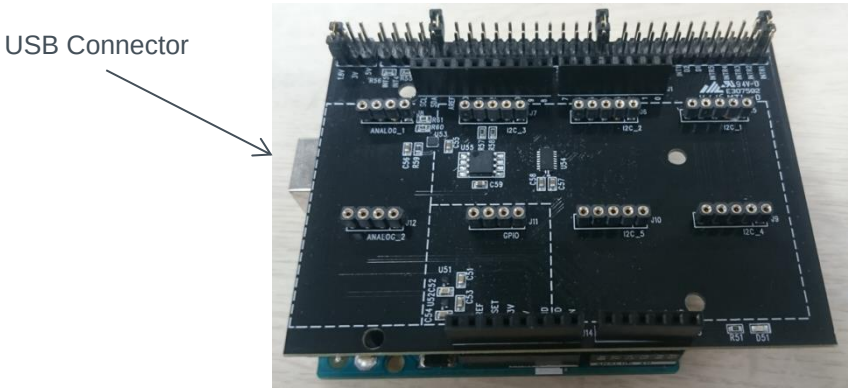
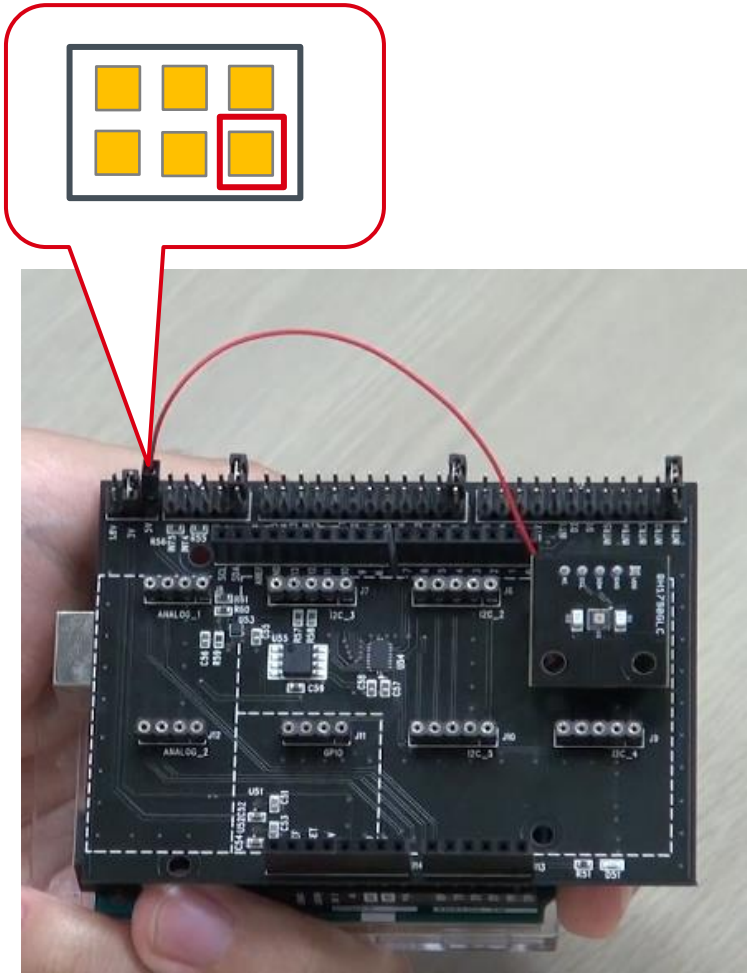
# Hardware setting

1. Connect Arduino and SensorShield




2. Connect BH1790GLC-EVK-001 on SensorShield I2C area
3. Set voltage of SensorShield to 3V
4. VLED terminal connect to SensorShield 5V terminal (right figure)
5. Connect PC and Arduino with USB cable

VLED terminal position



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# Prepare the software

6. Download BH1790GLC.zip from
   http://www.rohm.com/web/global/sensor-shield-support
7. Download FlexiTimer2 library from
   http://playground.arduino.cc/Main/FlexiTimer2
8. After download  this file, change the name to FlexiTimer2.zip
9. Launch Arduino IDE
10. Select [Sketch]->[Include Library]->[Add .ZIP library…], install 6 and 8 ZIP files
11. Select [File]->[Examples]->[BH1790GLC]->[example]->[BH1790GLC]

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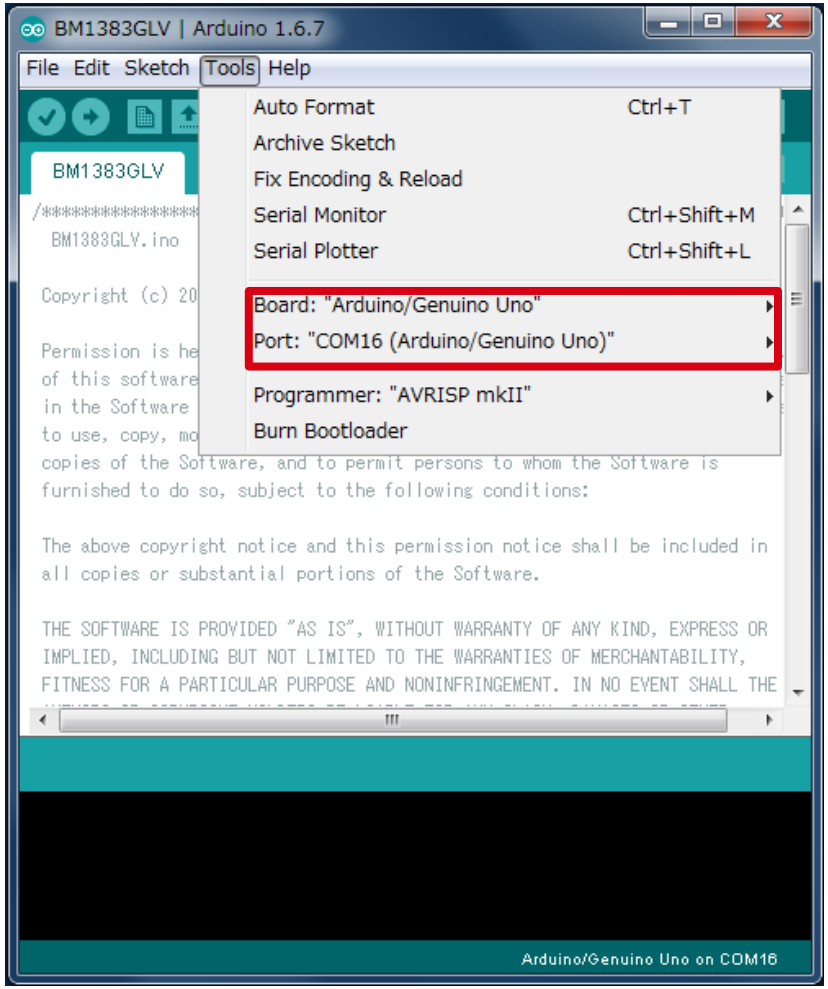
# Check the setting about Arduino IDE

12. Check the red frame contents.
    Boards is “Arduino/Genuino Uno”.
    Port is COMxx(Arduino/Genuino Uno). COM port number is different in each environment.

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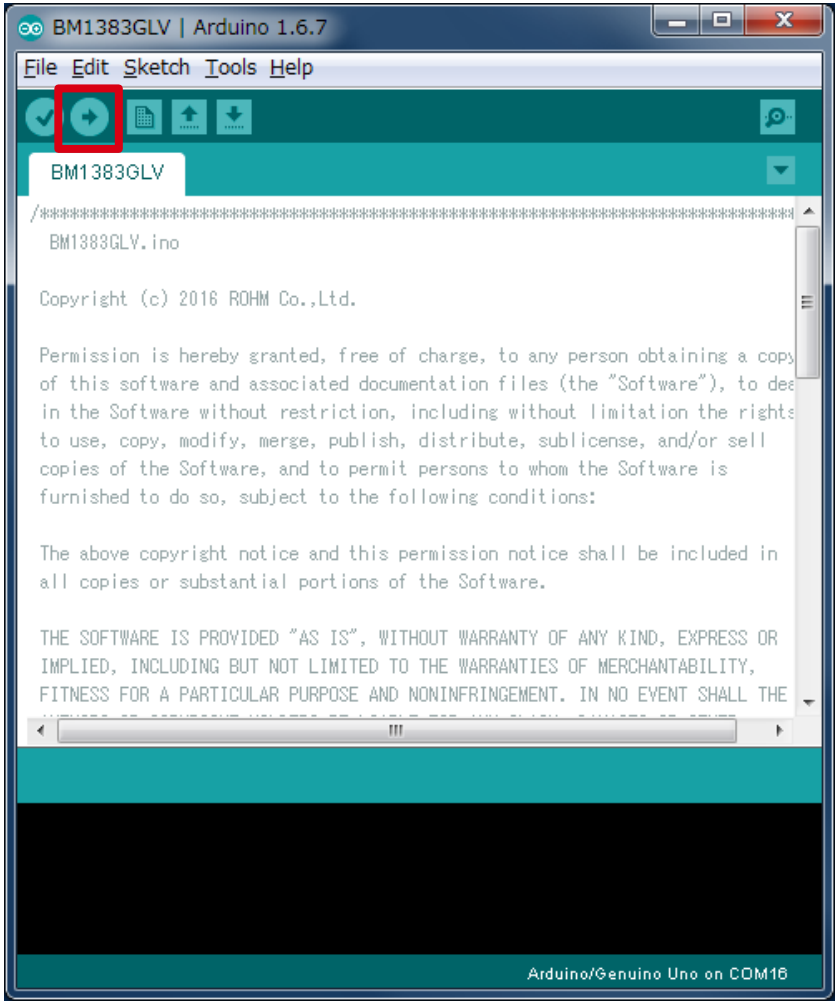
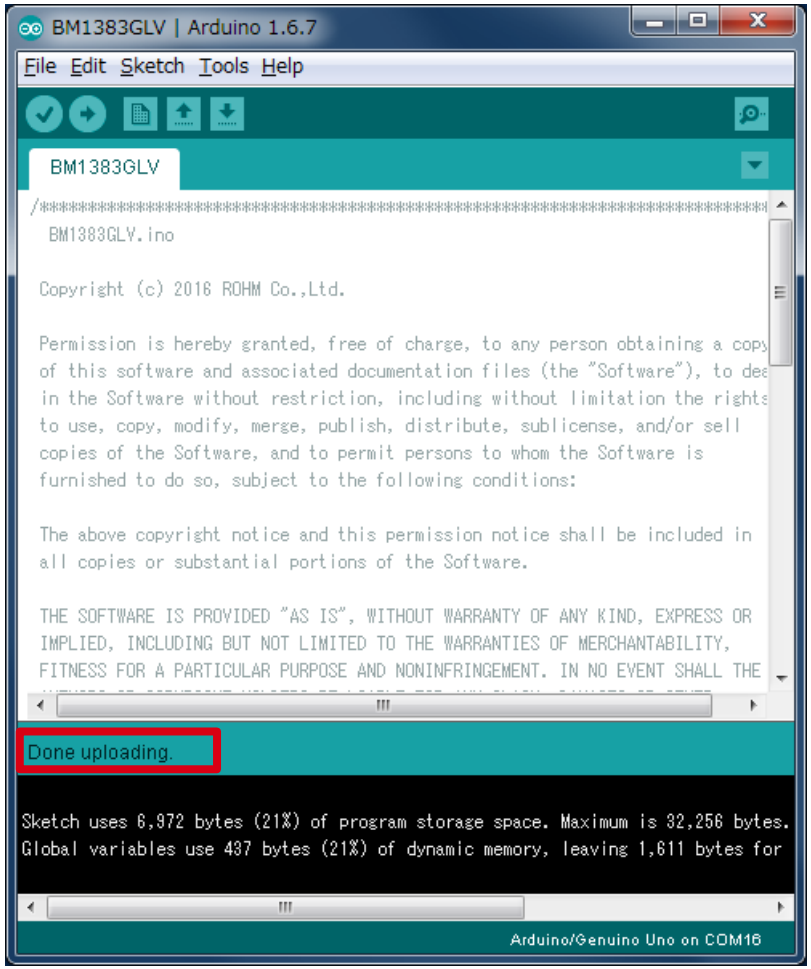
# Write the program about BH1790GLC-EVK-001

13. Write the program by Upload Button (red frame)




14. Check that the message of red frame is ”Done uploading”

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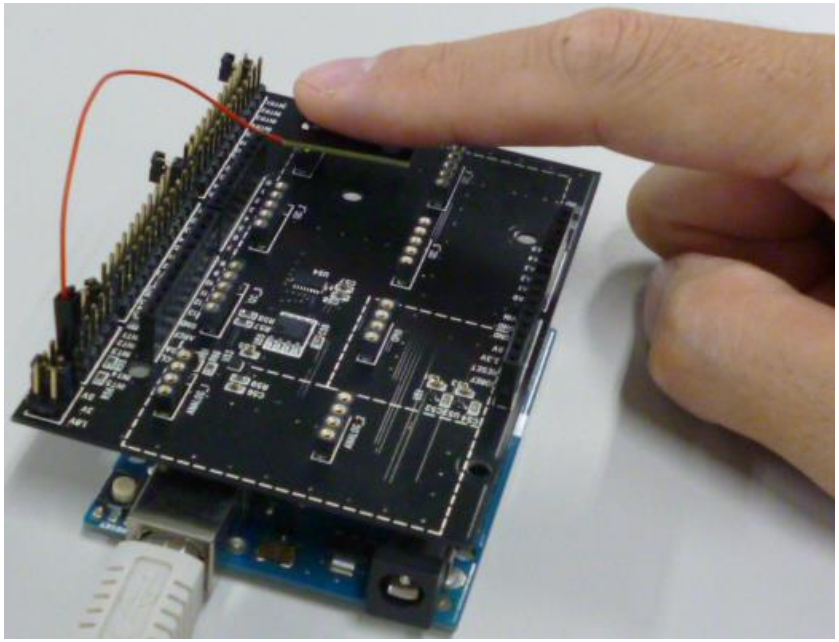
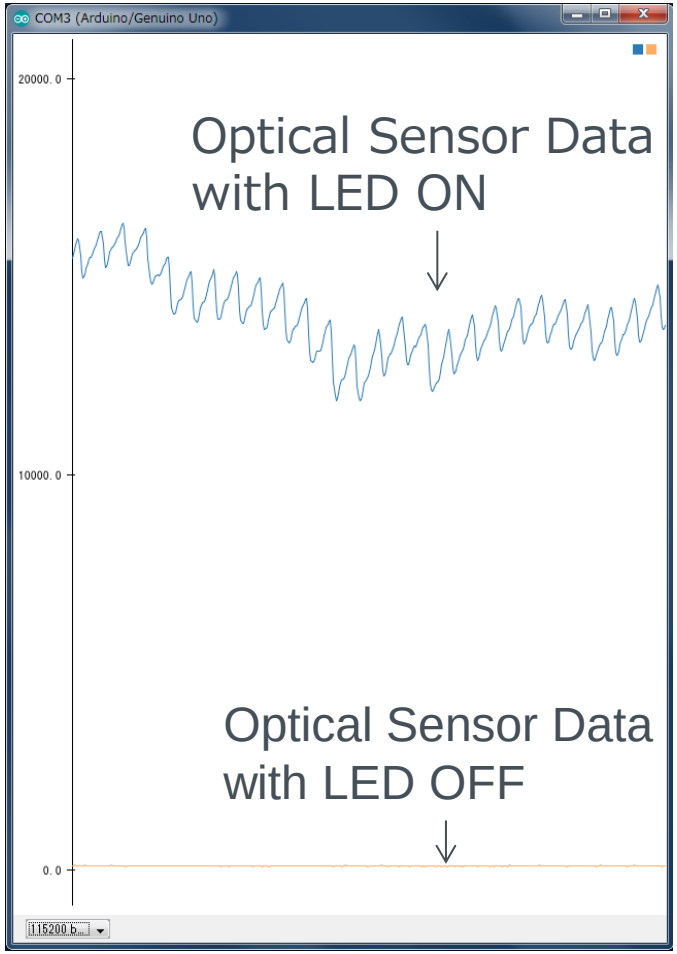
# Measurement

15. Select [Tools]->[Serial Plotter]
16. Put the finger as below figure (Note static electricity)
17. Display Optical Sensor Data with LED ON/OFF on graph



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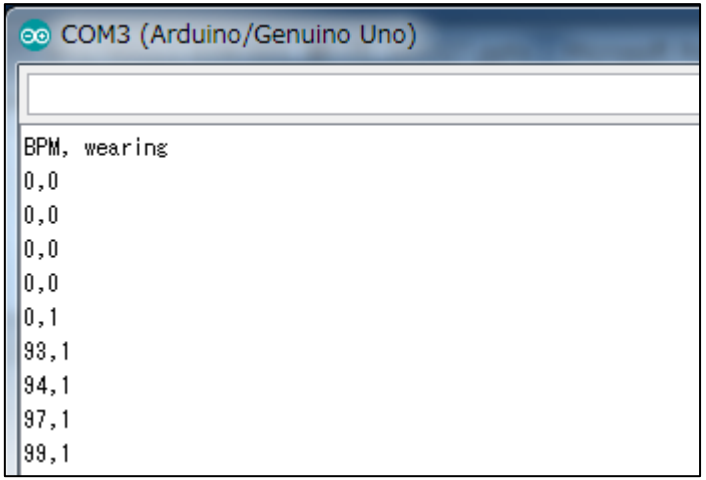
# Heart Rate Monitor

1. Install BH1790GLC.zip and FlexiTimer2.zip
2. Download BH1790_HeartRate.zip from http://www.rohm.com/web/global/sensor-shield-support
3. Launch Arduino IDE
4. Select [Sketch]->[include Library]->[Add .ZIP library…], install BH1790_HeartRate.zip file
5. Select [File]->[Examples]->[BH1790GLC_HeartRate]->[example]->[HeartRate]
6. Go ahead in the same way as P.4 and P.5
7. Select [Tools]->[Serial Monitor]
8. Put the finger as P.6 figure
9. Display Heart Rate value and wearing status.
   Left value is Heart Rate [unit:bpm], right value is wearing status [0 : not wearing, 1 : wearing]

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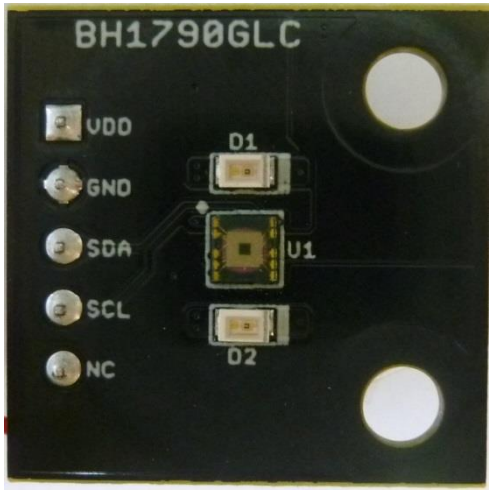
# Board Information




Top

Bottom

| Part number | function |
|---|---|
| C1 | Bypass capacitor for VDD(VCC1,VCC2) |
| C2 | Bypass capacitor for VCC2(N.M.) |
| C3 | Bypass capacitor for VLED(N.M.) |
| R1 | 0Ω register for connecting VCC1 to VCC2 |
| R2 | Pullup register for SCL(N.M.) |
| R3 | Pullup register for SDA(N.M.) |

※N.M. = No Mount

If you want to supply different voltage to VCC1 and VCC2, remove R1 register and supply voltage VDD and VCC2.

It is also possible to mount C2 Capacitor additionally.

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Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А