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Optical Sensor for Heart Rate Monitor

BH1792GLC-EVK-001 Manual

BH1792GLC-EVK-001 is an evaluation board for BH1792GLC, which is a ROHM Optical Sensor for Heart Rate Monitor. This User's Guide is about how to use BH1792GLC-EVK-001 together with SensorShield*1. *1 SensorShield is sold as a single unit of Shield-EVK-001 or as a part of SensorShield-EVK-002.

Preparation

- Arduino Uno 1pc
- Personal Computer installed Arduino IDE 1pc
 - Requirement : Arduino 1.6.7 or higher
 - Please use Arduino IDE which can be downloaded from the link below:
<http://www.arduino.cc/>
- USB cable for connecting Arduino and PC 1pc
- SensorShield 1pc
- BH1792GLC-EVK-001 1pc

Setting

1. Connect the Arduino and the SensorShield (Figure 1)

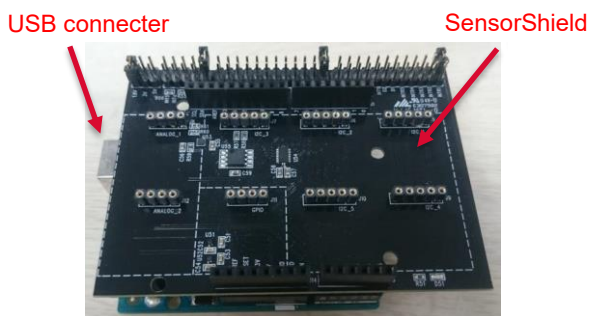


Figure 1. Connection between the Arduino and the SensorShield

2. Connect BH1792GLC-EVK-001 to the socket of I2C area on the SensorShield (Figure 2)
3. Set Voltage of the SensorShield to 3.0V (Figure 2)
4. Set the VLED terminal to the terminal for 5.0V of the SensorShield
5. Set Interrupt of the SensorShield to INT1 (Figure 2)

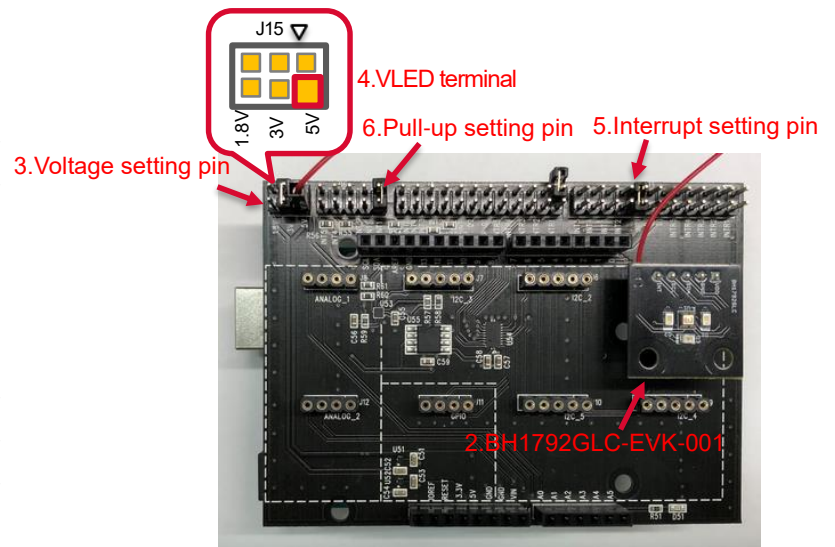


Figure 2. Connection between BH1792GLC-EVK-001 and the SensorShield

6. Set Pull-up setting of the SensorShield to INT1(Figure 2)
7. Connect the Arduino to the PC using a USB cable
8. Download BH1792GLC.zip from the link below:
<http://www.rohm.com/web/global/sensor-shield-support>
9. Download a library of FlexiTimer2 from the link below:
<http://playground.arduino.cc/Main/FlexiTimer2>
10. Change the file name of FlexiTimer2 to FlixTimer2.zip
11. Launch Arduino IDE
12. Select [Sketch]->[Include Library]->[Add.ZIP library...], install BH1792GLC.zip and FlixTimer2.zip
13. Select [File]->[Examples]->[BH1792GLC]->[example]->[BH1792GLC]

Measurement

1. Select [Tools] and check the contents enclosed in the red frame. (Figure 3) Board is "Arduino/Genuino Uno". Port is "COMxx (Arduino/Genuino Uno)". COM port number is different in each environment.

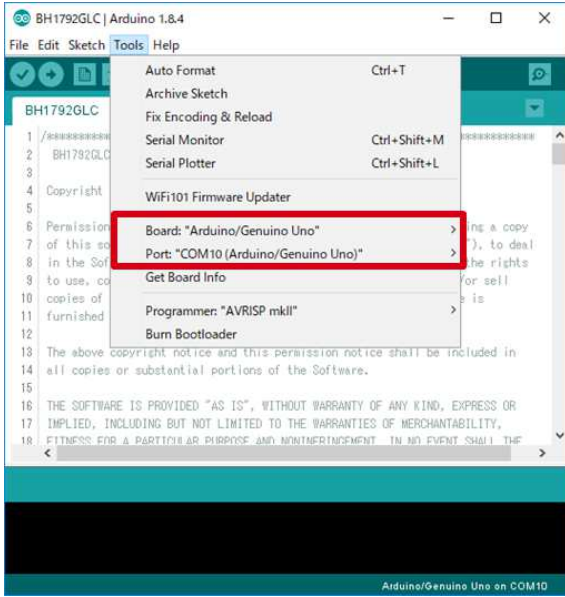


Figure 3. COM Port setting

2. Write the program by pressing right arrow button for upload (Figure 4)
3. Wait for the message "Done uploading" (Figure 4)

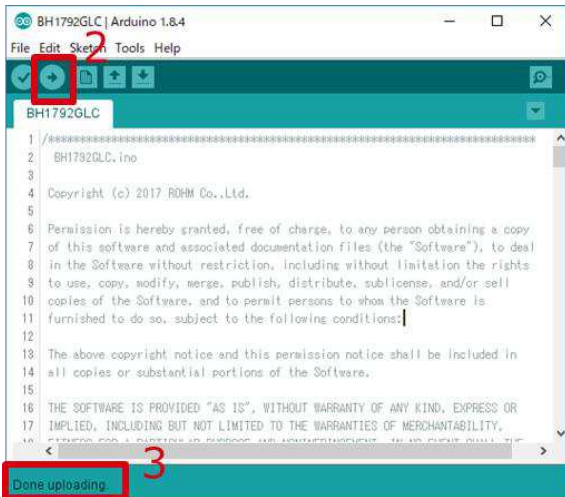


Figure 4. Uploading

4. Select [Tools]->[Serial Plotter] (Figure 5)

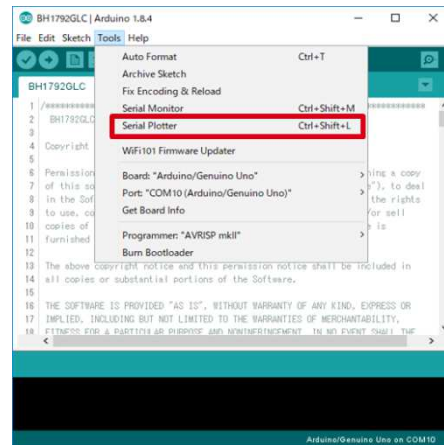


Figure 5. Tools Setting

5. Place finger on top of the sensor board. (Figure 6)
Note: Be careful of static electricity.

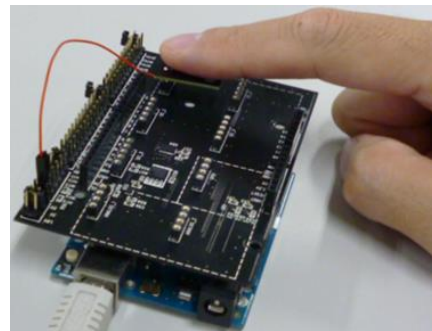


Figure 6. Measurement Environment

6. Check log of Serial Plotter (Figure 7)

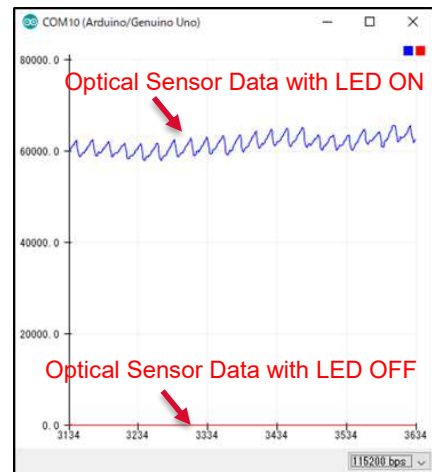


Figure 7. Serial Plotter

Board Information

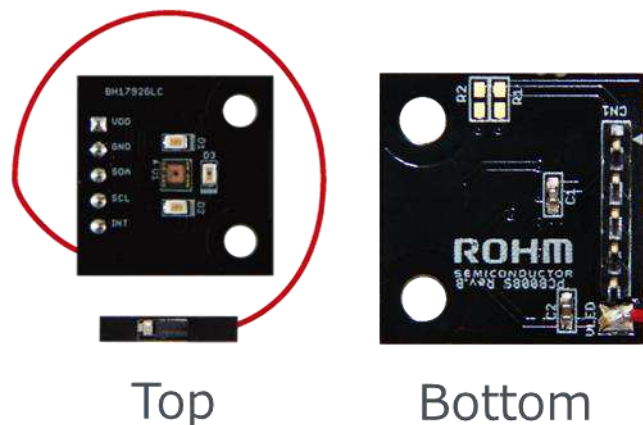


Figure 8. Picture of the board

Parts number	Function
C1	Bypass capacitor for VCC(0.1uF)
C2	Bypass capacitor for VLED(10uF)
R1	Pull-up register for SCL(N.M.)
R2	Pull-up register for SDA(N.M.)

※N.M. = No Mount

Table 1. Parts information

Notes

- 1) The information contained herein is subject to change without notice.
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- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
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