BH1790GLC-EVK-001 Manual

Feb 14, 2017
Sensor Application G

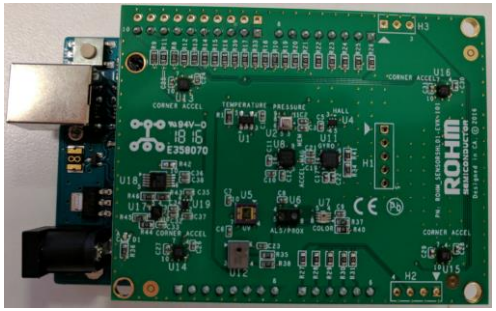
Prepared by USCMS Applications Engineering Team

Preparation/Required HW

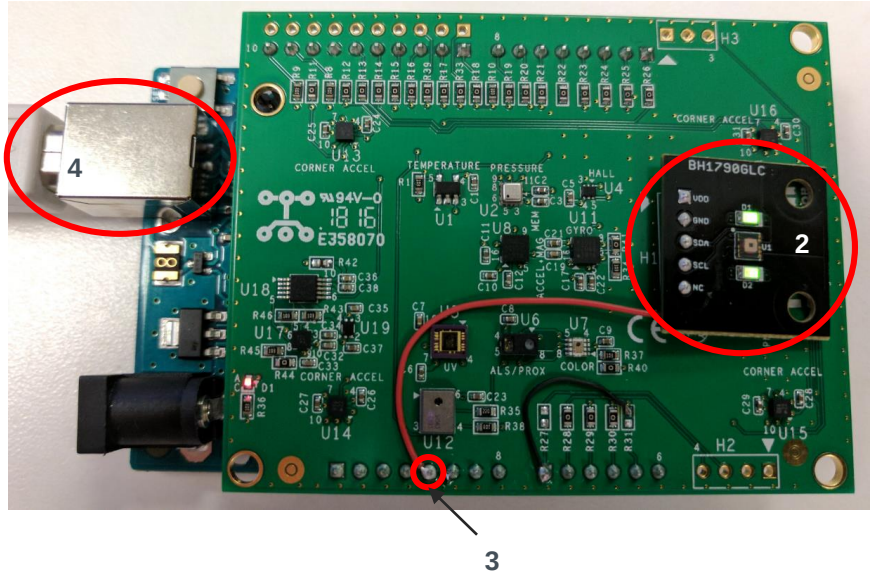
- Arduino Uno 1pcs
- Personal Computer with Arduino IDE 1pcs
  - Requirement: Arduino 1.6.7 later
  - Arduino IDE: http://www.arduino.cc/
- USB cable for connecting Arduino and PC 1pcs
- SENSORSHLD1-EVK-101 1pcs
- BH1790GLC-EVK-001 1pcs

Hardware Setting

1. Connect Arduino and Sensor Shield



2. Connect BH1790GLC-EVK-001 on the Sensor Shield
3. Connect the loose red wire (VLED) to the Sensor Shield's Pin 5 of H4 (5V)
4. Connect PC and Arduino with USB Cable

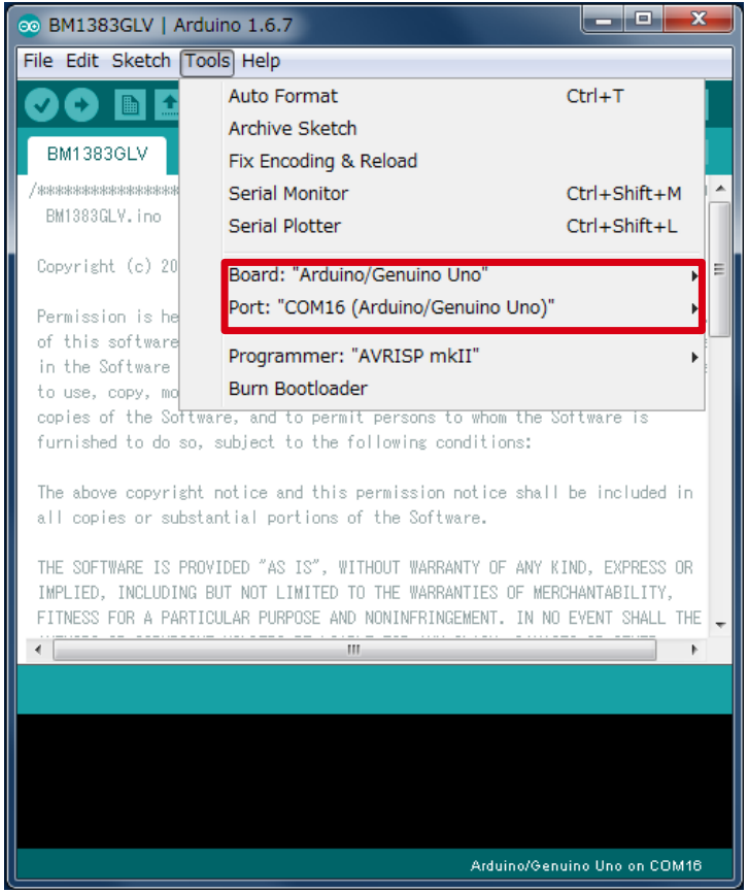


Prepare the Software

5. Download BH1790GLC.zip from
   - http://www.rohm.com/web/global/sensor-shield-support
6. Download FlexiTimer2 library from
   - http://playground.arduino.cc/Main/FlexiTimer2
7. After download this file, change the name to FlexiTimer2.zip
8. Launch Arduino IDE
9. Select [Sketch]->[Include Library]->[Add .ZIP library…], install ZIP files from steps 5 and 7
10. Select [File]->[Examples]->[BH1790GLC]->[example]->[BH1790GLC]

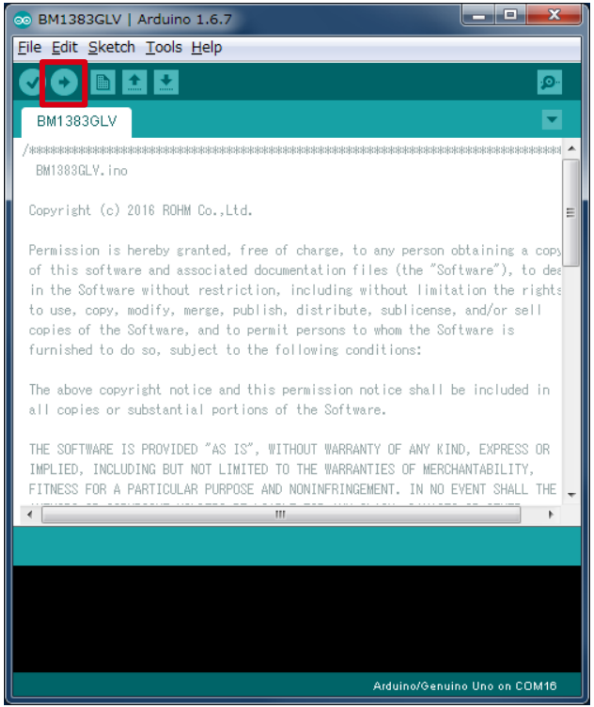
Check settings within the Arduino IDE

11. Check the red frame contents. Board should be “Arduino/Genuino Uno”. Port is COMxx (Crduino/Genuino Uno). COM port number can be confirmed in the windows device manager, but ultimately should be connected to the Arudino’s debugger

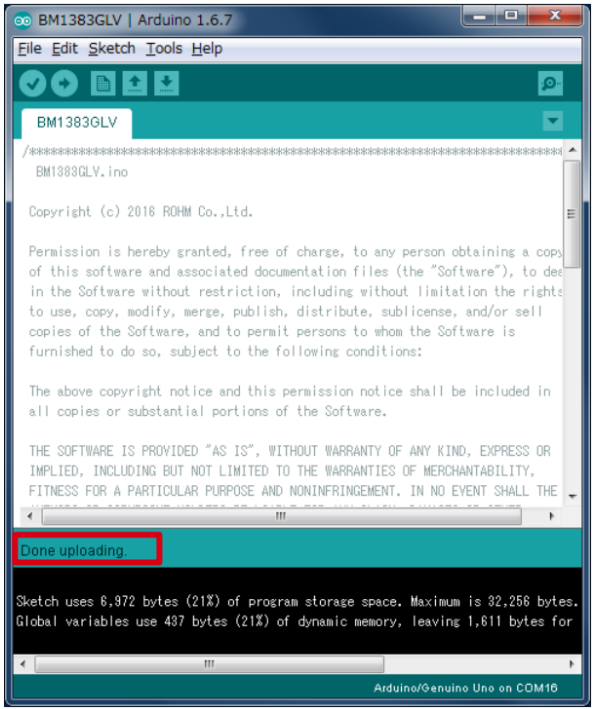


Load the program for BH1790GLC-EVK-001

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

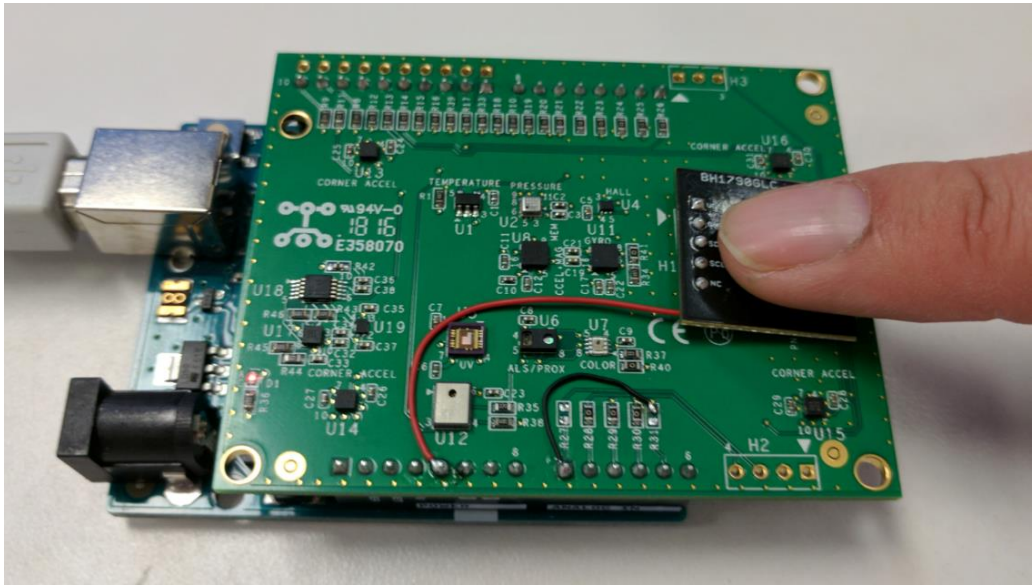


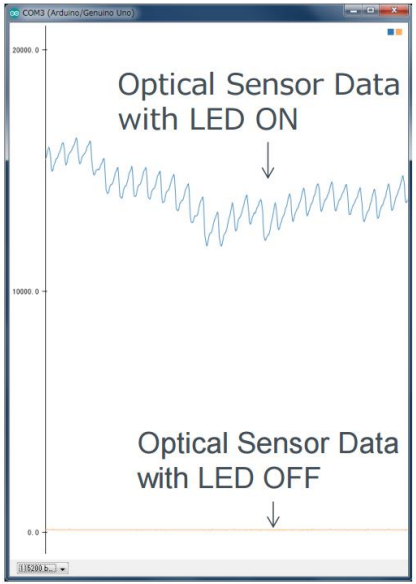
13. Check that the message of red frame is “Done uploading”



Measurement

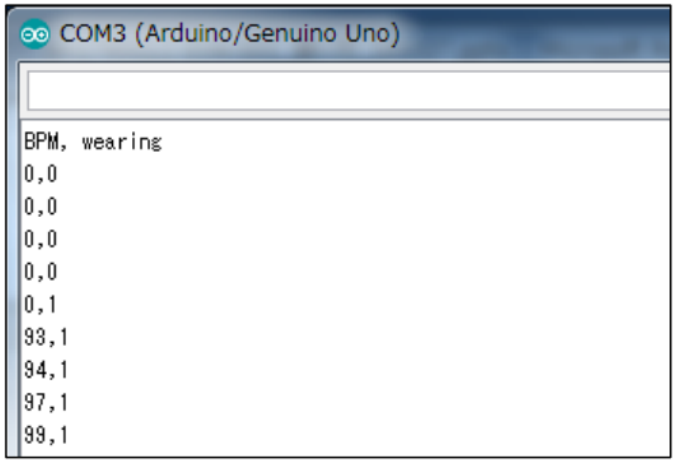
14. Select [Tools]->[Serial Plotter]
15. Put the finger as below figure (Note static electricity and avoid header contact)
16. Display Optical Sensor Data with LED ON/OFF on graph





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.
10. Left value is Heart Rate [unit:bpm], right value is wearing status [0 : not wearing, 1 : wearing]



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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