

# BH1790GLC-EVK-001 Manual

Feb/09/2017 Sensor Application G

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## Preparation



•	Arduino Uno	1pcs
•	Personal Computer installed Arduino IDE	1pcs
	Requirement : Arduino 1.6.7 later	
	<ul> <li>Please use Arduino IDE downloaded from &lt;a href="http://www.http:///www.http://www.http://www.http://www.http://www.http://www.http://www.http://www.http://wwwww.http://www.http://wwww.http://www.http://wwww.http:///www&lt;/th&gt;<th>ww.arduino.cc/</th></li></ul>	ww.arduino.cc/
•	USB cable for connecting Arduino and PC	1pcs
•	SensorShield-EVK-001	1pcs
•	BH1790GLC-EVK-001	1pcs



#### 1. Connect Arduino and SensorShield



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





- 6. Download BH1790GLC.zip from <u>http://www.rohm.com/web/global/sensor-shield-support</u>
- 7. Download FlexiTimer2 library from <u>http://playground.arduino.cc/Main/FlexiTimer2</u>
- 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]

## Check the setting about Arduino IDE



💿 BM1383GLV   Arduino 1.6.7				
File Edit Sketch Too	ls Help			
BM1383GLV	Auto Format Archive Sketch Fix Encoding & Reload	Ctrl+⊤		
/********************* BM1383GLV.ino	Serial Monitor Serial Plotter	Ctrl+Shift+M Ctrl+Shift+L		
Copyright (c) 20 Permission is he	Board: "Arduino/Genuino Uno" Port: "COM16 (Arduino/Genuino U	ino)" ►		
of this software in the Software to use, copy, mo	Programmer: "AVRISP mkII" Burn Bootloader	the Vottuere is		
furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in				
all copies or substantial portions of the Software.				
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE				
	Arduin	o/Genuino Uno on COM16		

R(0]=||

# 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"





- 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



COM3 (Arduino/Genuino Uno) 20000.0 **Optical Sensor Data** with LED ON VVVV 10000.0 **Optical Sensor Data** with LED OFF 15200 Б... 👻



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

💿 COM3 (Arduino/Genuino Uno)				
BPM,	wearing			
0,0				
0,0				
0,0				
0,0				
0,1				
93,1				
94,1				
97,1				
99,1				

### **Board Information**





Тор



#### 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	$0\Omega$ register for connecting VCC1 to VCC2
R2	Pullup register for SCL(N.M.)
R3	Pullup register for SDA(N.M.)

 $\times N.M. = No Mount$ 

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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