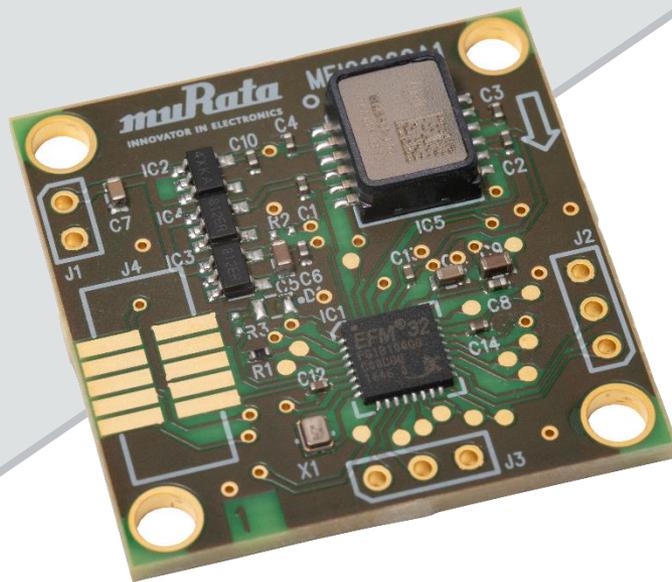


# BCGMCU

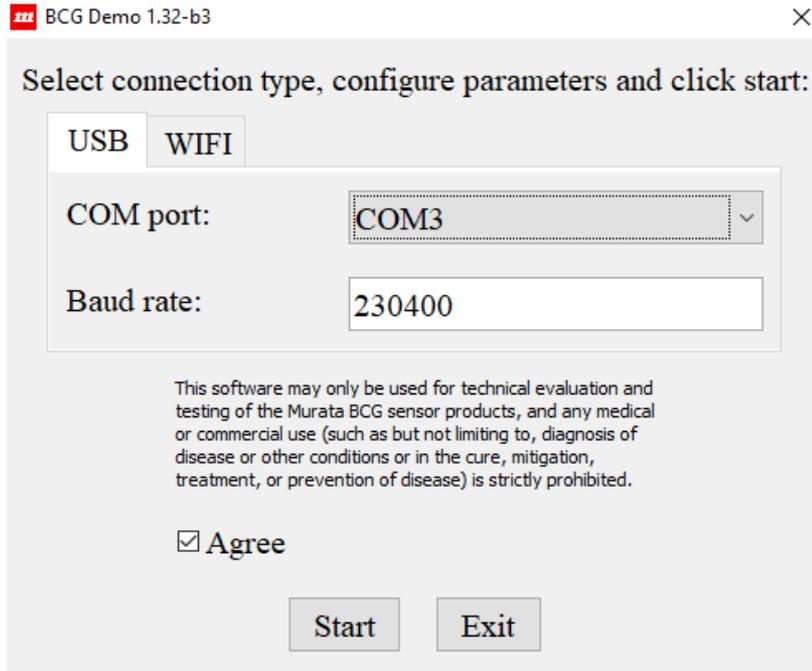
Quick start guide with the Windows  
Demo GUI & BCGMCU-D01-PCB



# Preparing BCGMCU-D01-PCB

- Required material
  - BCGMCU-D01-PCB
  - USB-UART bridge (such as FTDI TTL-232R-3V3-WE)
  - Soldering tools
- Solder voltage supply 5...9 V to Vin (J1). USB-UART bridge power wire can also be used as long as power supply is over 5V.
- Solder USB UART bridge to the UART-interface pins SERIAL\_TX (J2-1). and SERIAL\_RX (J2-2), and ground (J2-3).

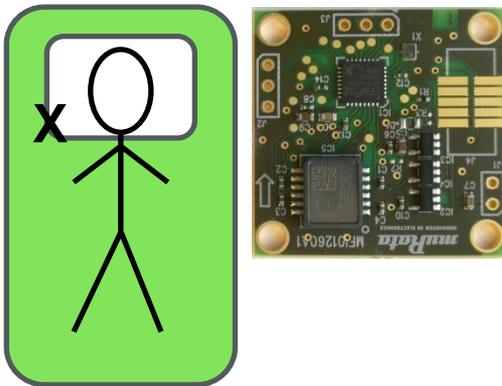




1. Connect your BCGMCU-PCB USB-cable to your PC
2. Start the GUI from BedSensorDemoGUI.bat
3. Select the correct COM port under the USB tab.
4. Select Agree and press Start to connect to sensor

# Place the sensor on a bed

1. The sensor should be placed on a bed to view actual measurement results
  - When sensor is not placed on a bed, results typically still indicate a heart rate when sensor experiences considerable acceleration
2. Place sensor on top of mattress, next to pillow, with the PCB arrow pointing in the longitudinal direction of the measurement subject



# View BCG data



BCG Demo 1.32-b3

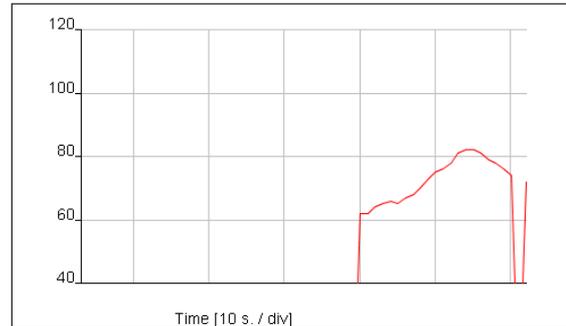
File Mode Tools

## BCG Demo



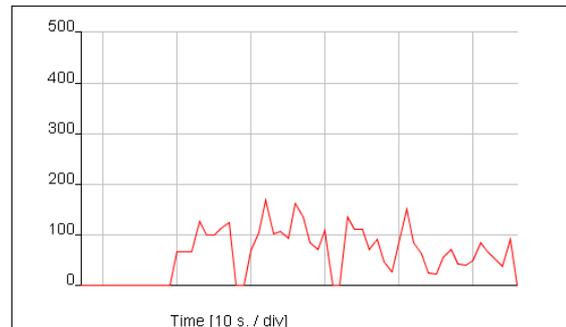
# 72

Heart Rate [1/min] ▾



# 62

Heart Rate Variability [ms] ▾



Status: Ok signal level

1. After connecting, BCG data outputs are visualized in the graphs in real time
2. Pull down menus can be used to select data to show

# Log and view full BCG data output

BCG Demo 1.32-b3

File Mode **Tools**

- Full screen mode
- Query versions
- Query network information
- Clear timestamp
- Calibration
- Reset sensor
- Set parameters
- Measurement direction
- Store output data to file

Heart Rate [1/min]

72

Heart Rate Variability [ms]

Status: **Ok signal level**

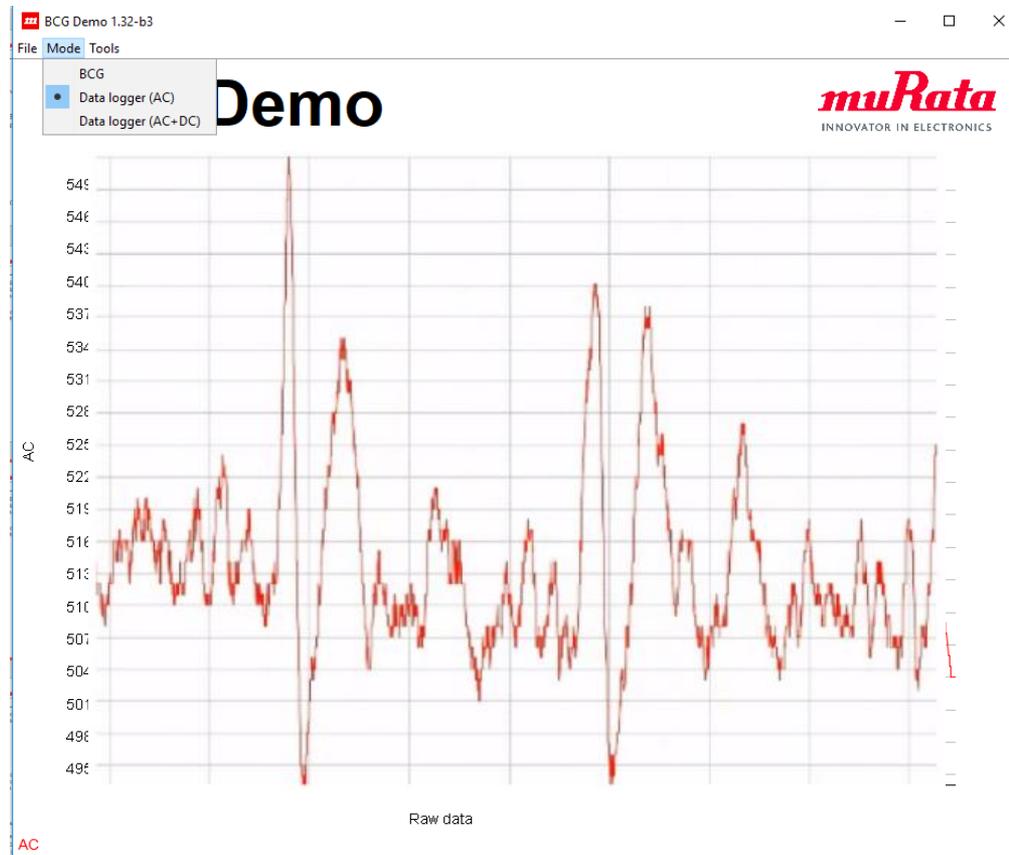
```
BCG Demo
6217,51,10,2797,192,6161,1,711,0,0
Samples [1/s]: 1
6218,50,10,4561,221,7297,1,1481,0,0
Samples [1/s]: 1
6219,54,10,1742,215,7841,1,593,880,0
Samples [1/s]: 1
6220,54,10,1742,215,9171,1,0,0,0
Samples [1/s]: 1
6221,56,10,7603,129,10337,1,910,0,0
Samples [1/s]: 1
6222,56,10,7603,129,10486,1,0,0,0
Samples [1/s]: 1
6223,57,11,3689,67,9788,1,878,0,0
Samples [1/s]: 1
6224,58,11,1851,76,8441,1,1043,0,0
Samples [1/s]: 1
6225,58,11,1851,76,6823,1,0,0,0
Samples [1/s]: 1
6226,58,11,1571,41,5771,1,945,0,0
Samples [1/s]: 1
6227,58,11,2462,182,5867,1,1275,0,0
Samples [1/s]: 1
6228,58,10,2862,115,6112,1,858,0,0
Samples [1/s]: 1
6229,0,0,0,0,6112,2,0,0,0,0
Samples [1/s]: 1
```

1. Data logging can be started from “Tools->Store output data to file”

2. In order to view the full BCG data lines in real time, the GUI can be configured to display these in a separate view

1. Close GUI, find file etc/demo.properties
2. Change  
show.debug.messages=false  
to  
show.debug.messages=true
3. Save file and restart GUI
4. BCG data is reported in CMD prompt with below format  
timestamp,hr,rr,sv,hrv,fft\_indicator,s  
tatus,b2b1,b2b2,b2b3

# View raw acceleration waveform



1. Select “Mode->Data logger (AC)” to display raw acceleration waveform
2. This view can be used when finding the optimal position for the sensor in bed
  - In a good location, the BCG signal waveform is clearly identifiable when the subject remains still (similar to the waveform in the image where two BCG waveforms can be seen)