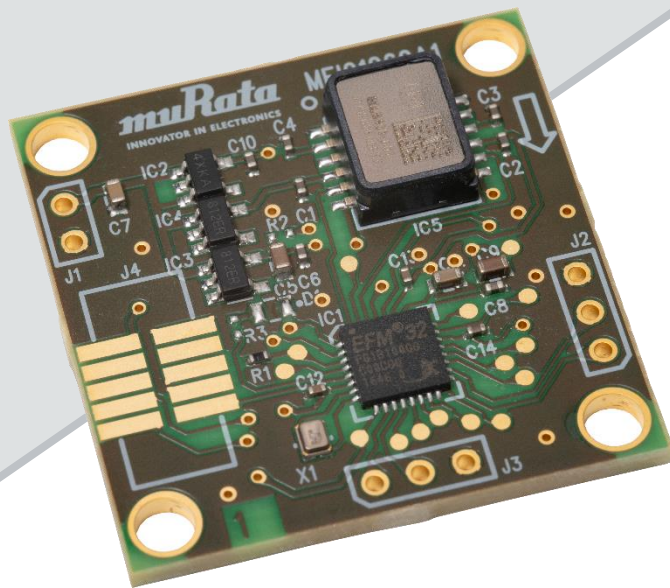


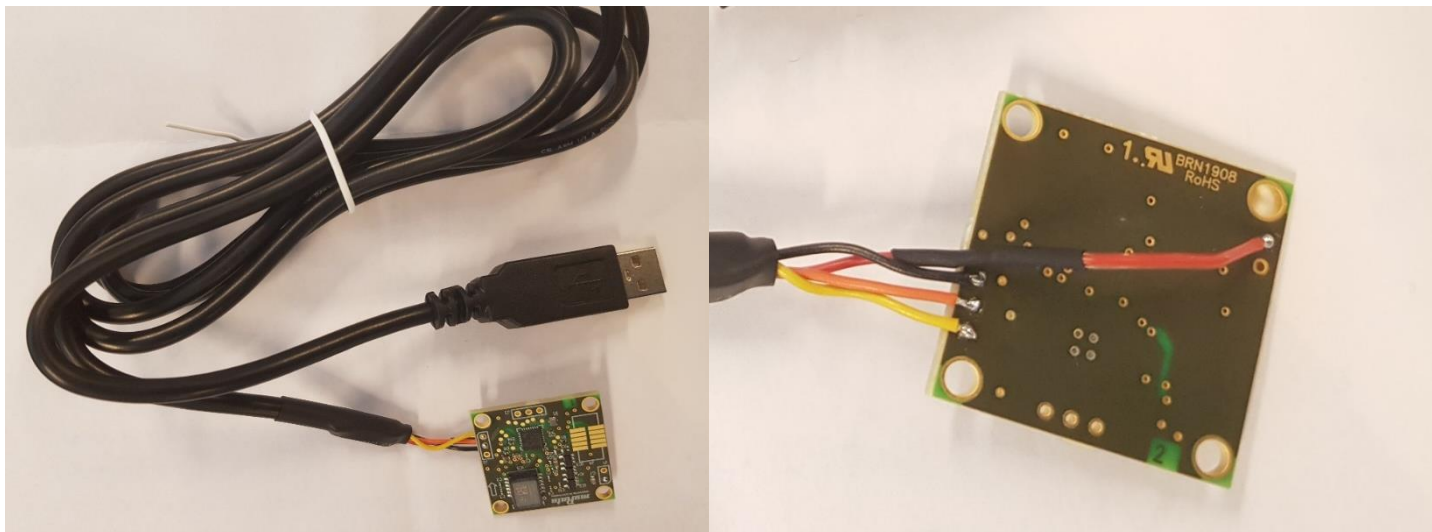
BCGMCU

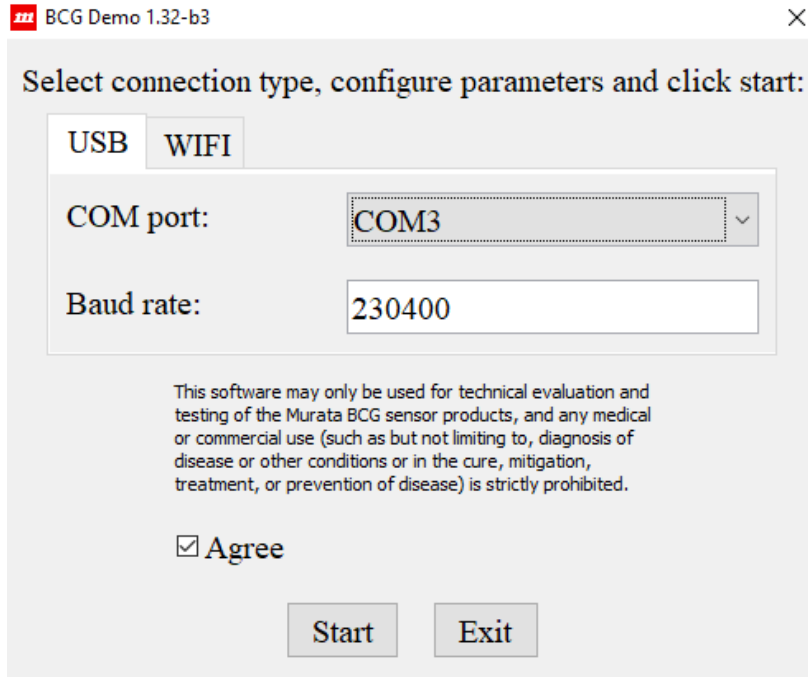
Quick start guide with the Windows
Demo GUI & BCGMCU-D01-PCB



Preparing BCGMCU-D01-PCB

- Required material
 - BCGMCU-D01-PCB
 - USB-UART bridge (such as FTDI TTL-232RG-VSW5V-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).

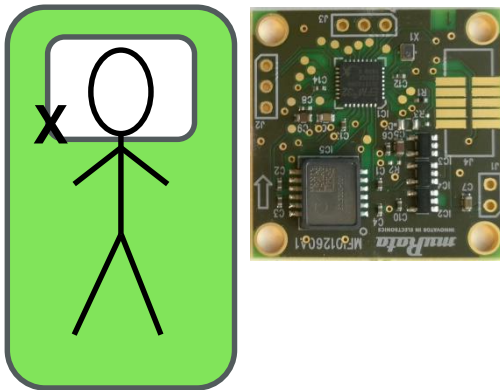




1. Connect your BCGMCU-PCB USB-cable to your PC
2. Start the GUI from BedSensorDemoGUI.bat
3. Select the correct COM port under the USB tab.
4. Select Agree and press Start to connect to sensor

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

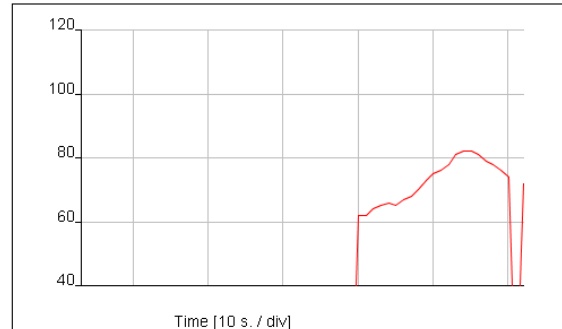
File Mode Tools

BCG Demo



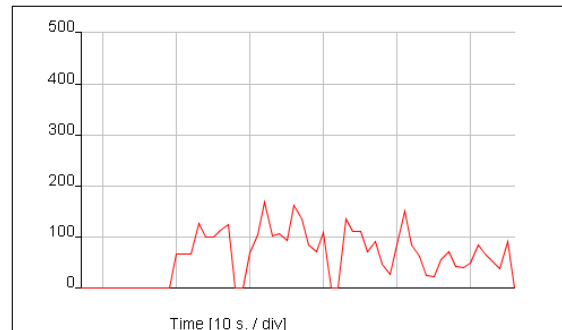
72

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**

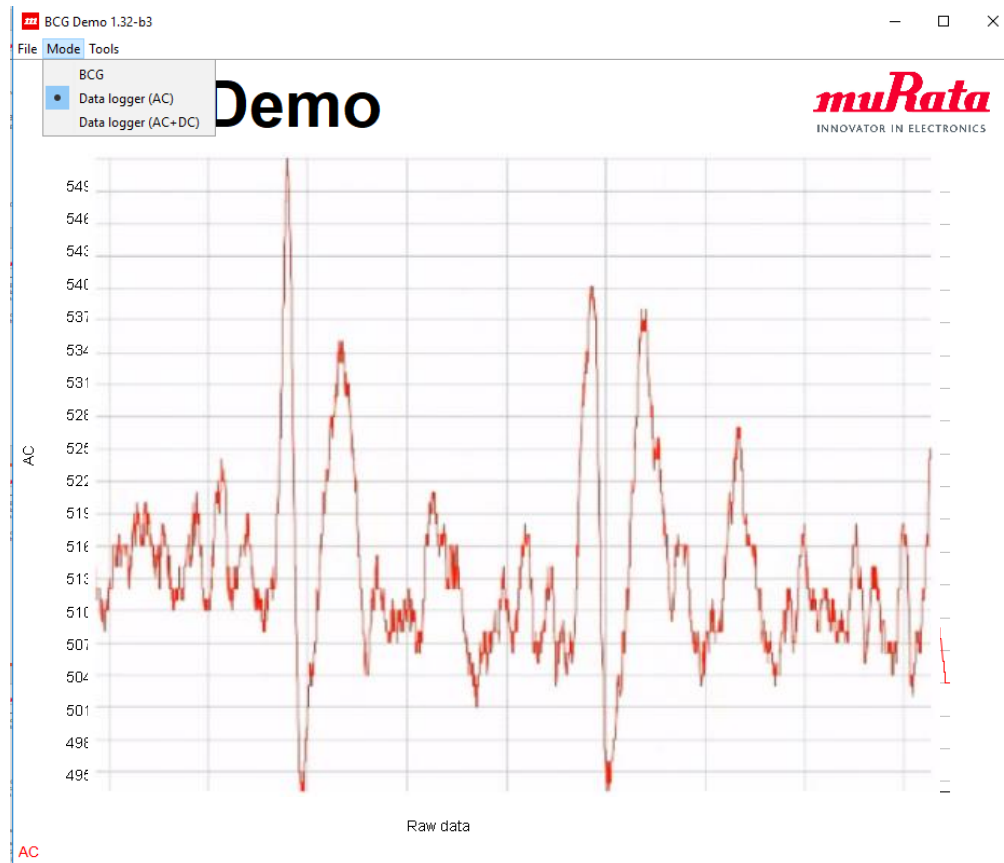
```
BCG Demo
6217,51,10,2797,192,6161,1,711,0,0
Samples [1/s]: 1
6218,50,10,4561,221,7297,1,1481,0,0
Samples [1/s]: 1
6219,54,10,1742,215,7841,1,593,880,0
Samples [1/s]: 1
6220,54,10,1742,215,9171,1,0,0,0
Samples [1/s]: 1
6221,56,10,7603,129,10337,1,910,0,0
Samples [1/s]: 1
6222,56,10,7603,129,10486,1,0,0,0
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
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)