Breathfiles – A tool to visualize the output of Breathpal

User manual

Version 1.0 – jan 2024, updated for BreathFiles version 1.2

Inhoud

Description

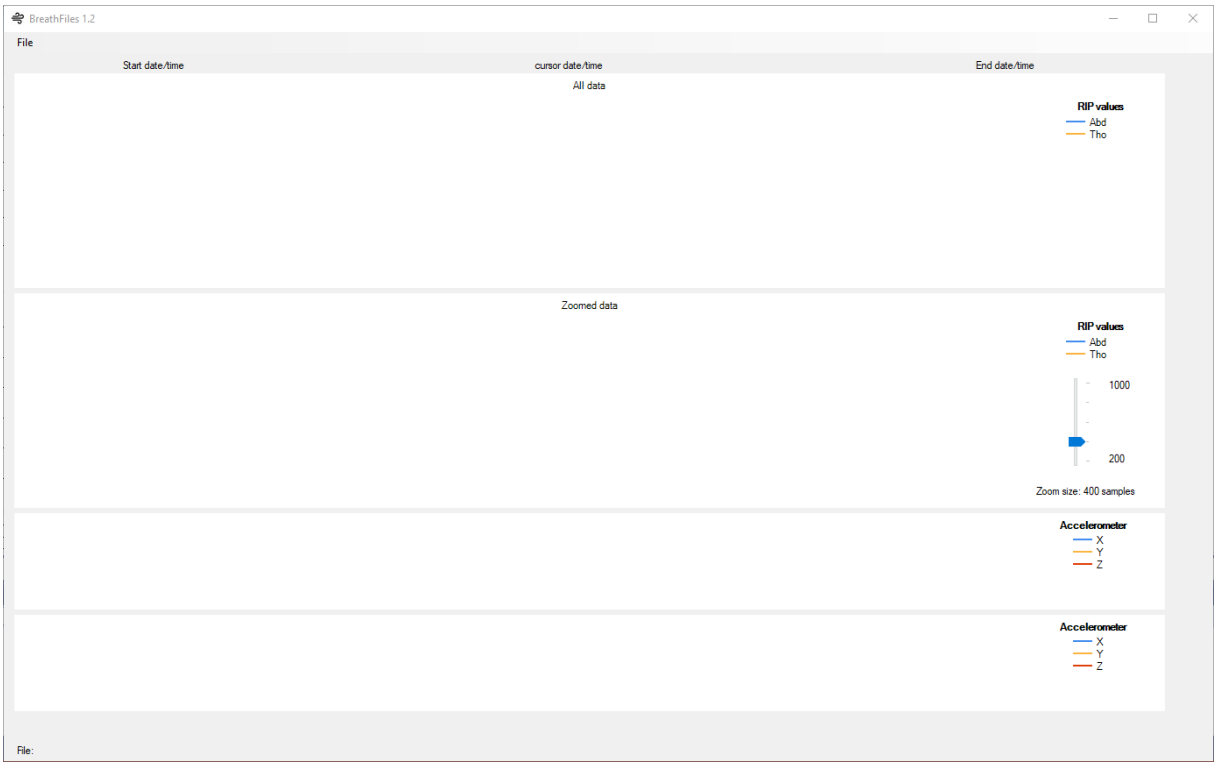
Breathfiles is a Windows program (Breathfiles.exe) that can open typical.csv output files of the Breath application, show its graphical content and save a selection of the data to a new .csv file.

Purpose

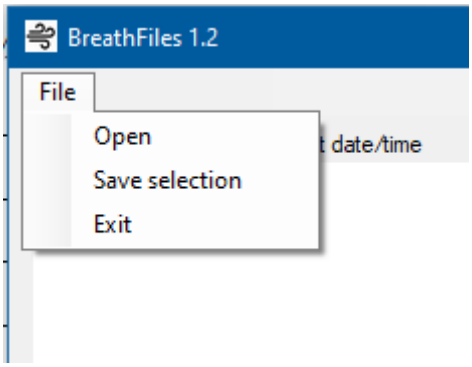
Breathpal captures breathing data. This data can either be written to a .csv file on the moment of the measurement, via the Breath application, or, also by use of the Breath application, the internal storage of Breathpal can be retrieved and written to file. The latter procedure can result in relatively large files, which can contain the data of many ours of measurements. Such files can contain periods of measurements which are of interest for further analysis, and it can be very useful to select the data of interest and write them to a separate (smaller) file. Also, the tool Breathfiles offers instant visualization of data in the files.

User guide

After starting Breathfiles.exe, this window is shown:



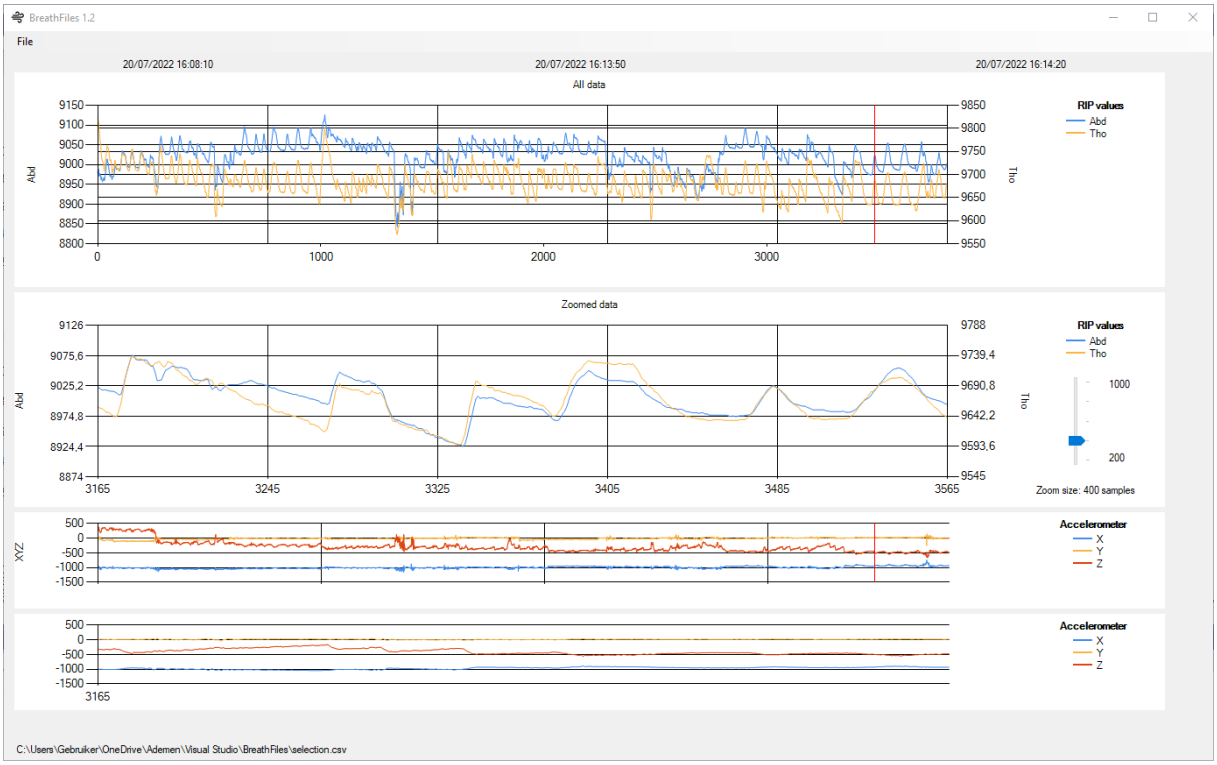
The menu offers three possibilities:



Open a data file

Select Menu item File>Open.
Opens a Breath.exe output .csv file. The required format is
`R1, R2, X, Y, Z, Timestamp, Sample number, Temperature, Event list`

Now the data is read and graphs are drawn:



The top graph shows the Thorax and Abdominal measurement values of the full file. Abdominal values in blue, thorax values in orange color.

The time stamps of the data at the start of the file and at the end of the file are printed on top of the graph, left and right:

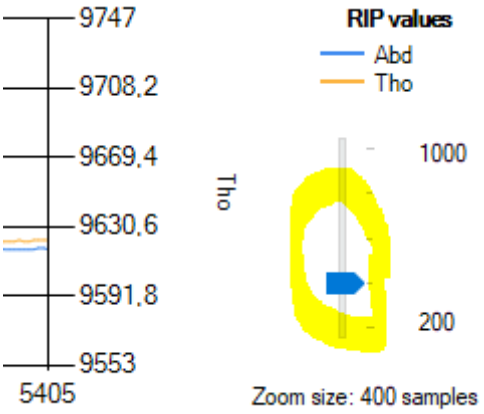
...

The left axis shows the range of values of the abdominal signal, on the right the axis for the thorax signal.

Notice in the above example, that the thorax signal has a misreading value of zero close to the right, and a value close to 10.000 for the rest of the graph. Due to scaling both values are shown in the graph, resulting in a strong compression for the thorax graph.

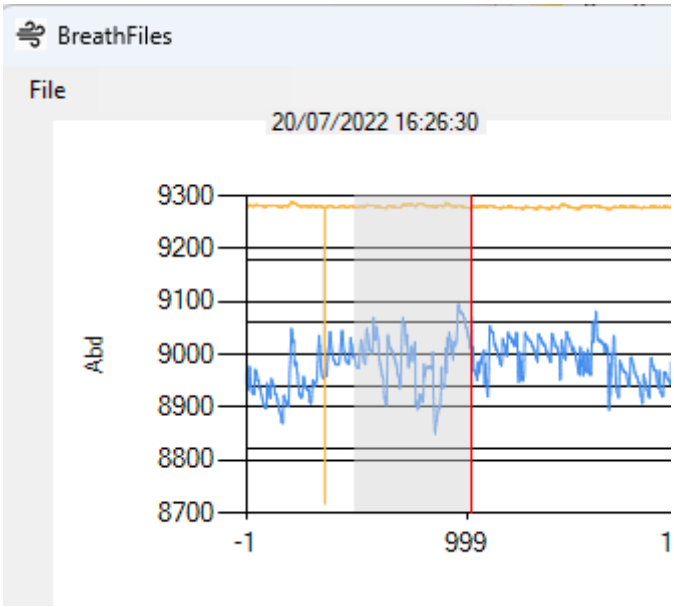
Now, hovering the mouse over the top graph, the second graph shows a zoom-in selection of the data, starting at the mouse position. Also in this graph, the vertical axis are scaled to have the values fit in the graph area.

The size of the magnified, zoomed graph can be set by a track bar on the right of the zoom graph. Use the mouse to move the blue right pointing arrow up and down.



Data selection and saving

When pressing the left mouse button and moving the mouse to the left or to the right you can select a range of measurement from the top graph.:



This selection of data can now be written to a new .csv file, using the **File>Save selection** menu item.

This new file can then be opened, for further study.

The accelerometer data are shown in the bottom graph area: on top the accelerometer values X, Y and Z of the complete file, in the lowest graph the data of the selection.

Close the program by selecting the menu item File>Exit

REMARKS

The application is still under development, and may contain bugs. Please let me know suggestions for improvements.