

VivoSense®

Quick Start Guide

- **Opening VivoSense®**

Open VivoSense® by double clicking on the VivoSense® shortcut icon in the Vivonoetics folder on the start menu.

- **Opening a .vsn File**

Once VivoSense® is open, select the File menu and the **'Open .vsn File'** option as shown in Figure 1.

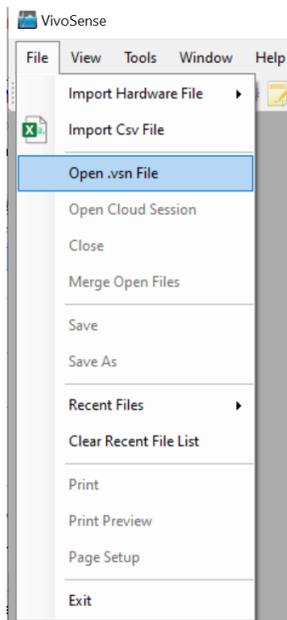


Figure 1. Opening .vsn File

Note:

The default directory for storing .vsn files is My **Documents\Vivonoetics\VivoSense\Data**. If this is not the first time you are using VivoSense® and you have previously changed the default directory, please navigate to this directory and select the file 'Quick Start Sample Session.vsn'. This file ships with the installer and should be on your PC.

- **Importing Hardware Files**

Once VivoSense® is open, select the File menu and the ‘**Import Hardware File**’ option as shown in Figure 1, then a screen will pop out as in the figure 2.

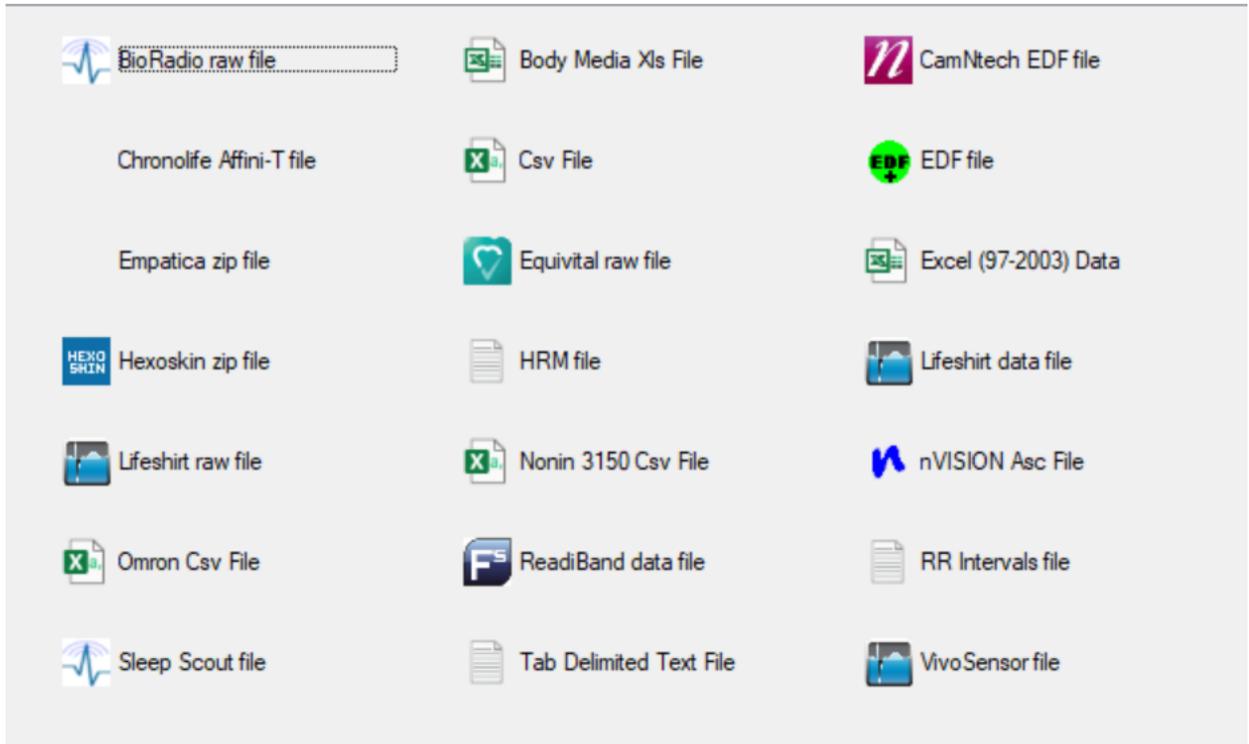


Figure 2. Importing Hardware File

- **Exploring VivoSense® Data**

VivoSense® supports analysis of data collected using different physiological monitoring sensor packages/platforms. Depending on which sensor platform being used to collect data you will first need to import the raw sensor data using the Import menu option. This import creates a .vsn file which can then be saved and re-opened another time without the need for a repeated import.

This tutorial does not deal with importing raw data. In order to be generic and sensor agnostic the starting point of this tutorial is thus an already imported .vsn file and not a raw data file.

The Data Explorer

Data may be viewed using the Data Explorer. To open this, select the ‘file cabinet’  icon on the toolbar. This will display a sub-window called the data explorer. The top section of this window is shown in Figure 3.

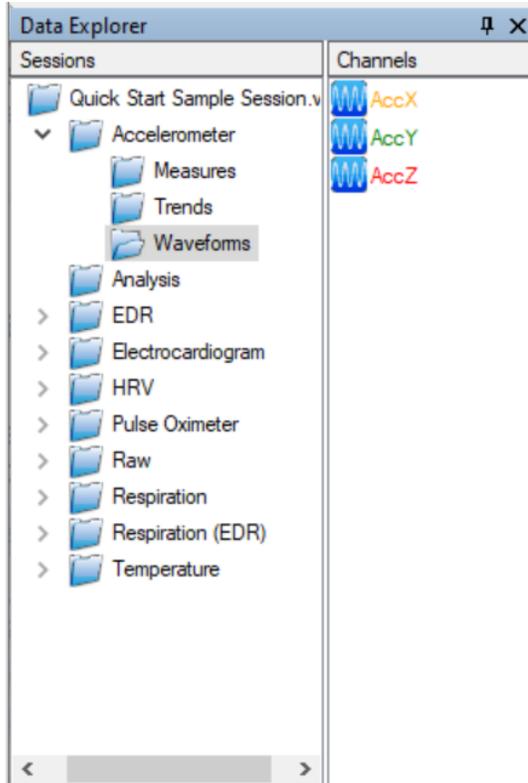


Figure 3: Data Explorer Sub-window – Top Section

Data Channels

The data explorer consists of Sessions and Channels.

A **Session** is the term used to describe a data file. Typically files are generated as a result of a recording session.

A **Channel** is the term used in VivoSense® to describe available time-series data for display and analysis.

The lower half of the data explorer consists of a set of folders, with each folder containing data channels.

To begin we will expand the data folder labeled '**Accelerometer**' and select the sub-folder labeled '**Waveforms**'. As may be seen from Figure 3, this folder contains two channels.

Note:

That different channels have different icons describing the nature of the channel. In Figure 3, the  icon is used to indicate that these channels are waveform channels.

The Synchronized Chart Panel (SCP)

The SCP may be thought of as the drawing board upon which data is displayed. It is, as its name suggests, a placeholder for multiple charts which can contain plots of data. The 'synchronized' term refers to the fact that these data are all on the same time-basis and are thus synchronized in time. This is displayed in Figure 4.

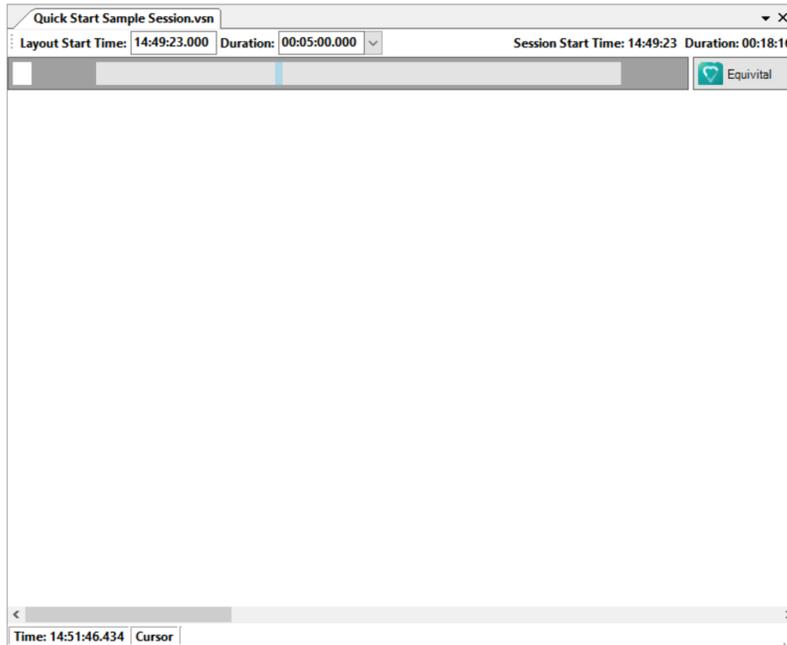


Figure 4: Synchronized Chart Panel (SCP)

Emptying the SCP

The first time VivoSense® is opened, the SCP will be an empty slate. However, if you have been using VivoSense® prior to this tutorial, it may contain plots of data. We will therefore begin by cleaning the SCP to its empty starting point. To do this, navigate to the bottom half of the data explorer as shown in Figure 5 and double click on the '**Empty**' icon. This will empty the SCP or more correctly, load an empty layout to the SCP.

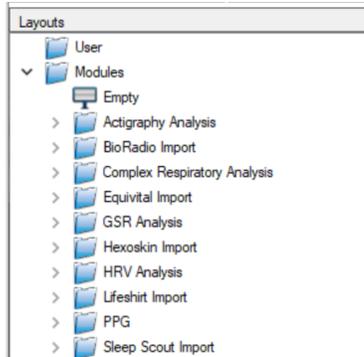


Figure 5. Empty SCP

Displaying Data Channels

To display the data channel labeled *AccX*, select this with the mouse and drag it onto the empty SCP. Releasing the mouse will display a plot of this waveform on the first chart on the SCP, labeled 'Chart1'.

An alternative to dragging data channels onto the SCP for display is simply to double click on the data channel thus adding a new chart to the bottom of the existing charts on the SCP. Go ahead and try this by double clicking on *AccY* to get two charts on the SCP, each with a single Waveform plot, as shown in Figure 6.

Now remove Chart2 by right clicking on the chart and selecting Chart->Remove as shown in Figure 7.

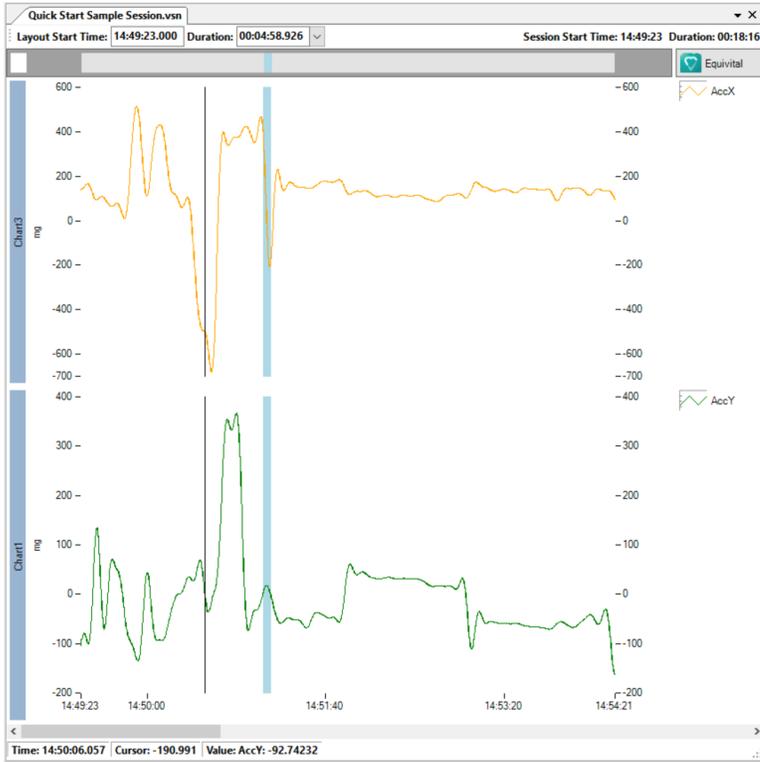


Figure 5: SCP with Two Charts Containing Plots of an Acc Waveform

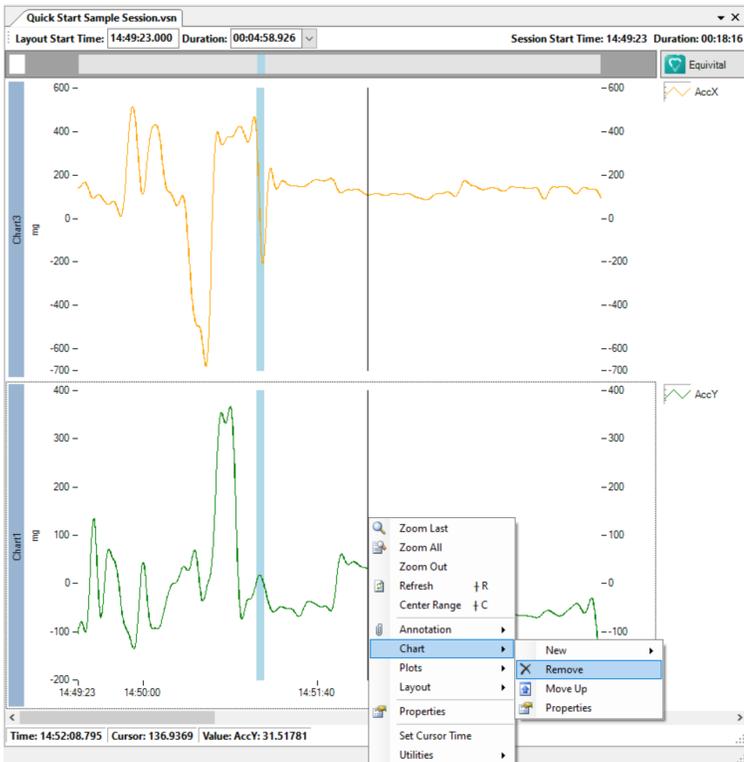


Figure 6: Removing a Chart

- **Centering and Scaling Data**

- Centering Data**

- Once the HR channel appears on the screen, use the up arrow key to zoom out numerous times. The plot will go out of range, but you can easily center it by clicking anywhere on the chart and pressing the shortcut key 'c'.

- Scaling Data**

- Editing the range boundaries is also available by double-clicking on the top or bottom markings on the y-axes, as shown in Figure 7. Once highlighted, you can change the number value to whatever you like. When you're finished, use the 'c' key again to center the range. Remember that in order for the shortcut to center to operate, you must first click on the chart area.

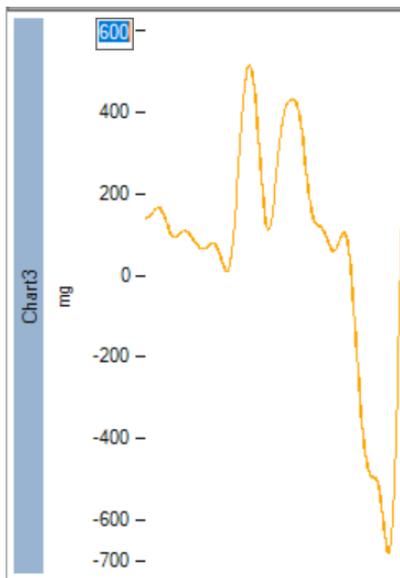


Figure 7: Editing the y-Axis Range

- **Measuring Data**

The cursor may be used to measure data plotted in VivoSense®. To complete this, place the cursor anywhere on Chart2 which contains the HR plot and note the values in the status bar as the cursor is moved as shown in Figure 8.



Figure 8: Status Bar Showing Cursor and Plot Values.

To measure a range, left click the mouse on the chart and hold the mouse button down while you drag a rectangular region between two points on the same chart. Note how the status bar now shows both the time difference (x-axis) and the cursor difference (y-axis).

Figure 9: Status Bar Showing a Measured Range.

● Layouts

Previously we introduced the concept of the 'Empty' layout to clear the SCP. We will now expand on this and show how custom layouts may be saved.

At this point there should be three charts displayed on the SCP. The first chart contains two plots: Ecg1 and Rwave1. The second chart contains one plot: HR. The third chart contains one plot: Trend HR.

If you wish to repeatedly organize and display plots of channels in this way simply save this as a layout. To do so, right click anywhere on the charts and navigate to Layout->Save as shown in Figure 9.

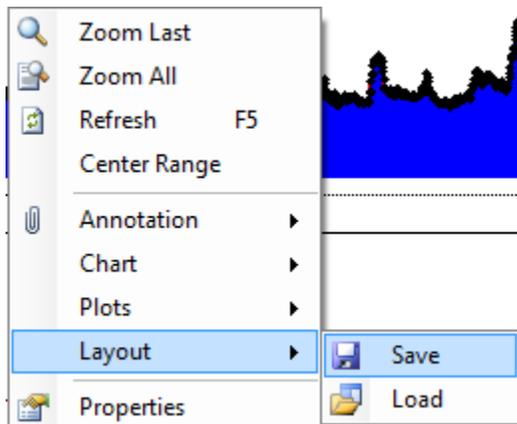


Figure 9: Saving Layouts

This will bring up a dialog to save a layout. Right click on the 'User' folder and select 'New Folder'. A new folder will appear. Right click on this and change the name of the new folder to Example. Then select Example and in the dialog type 'First Example' as shown in Figure 14. Once saved, note that it will appear in the bottom half of the data explorer as shown in Figure 15.

Please go ahead and test this.

Double click on the 'Empty' layout to clear the SCP.

Now double click on the 'First Example' layout to bring back the layout that was saved and continue where we left off.

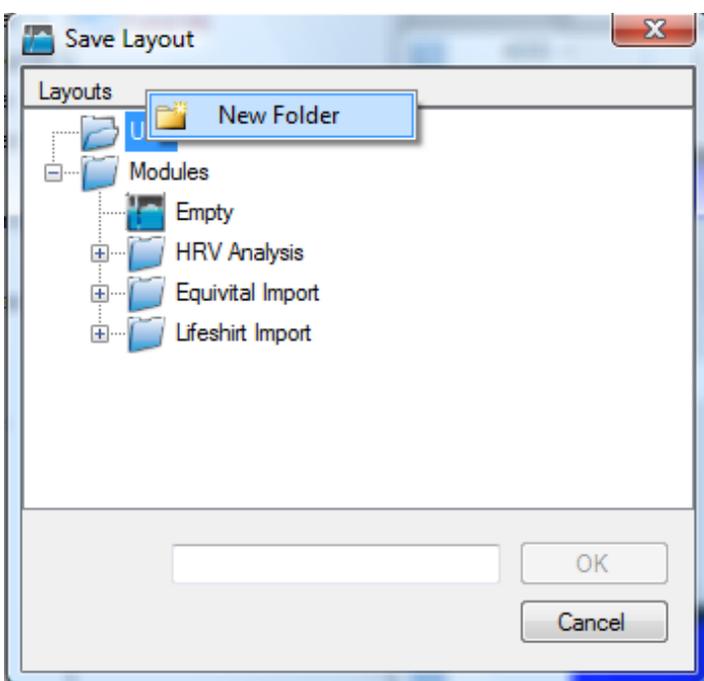


Figure 10: Creating a New Folder to Store a Layout

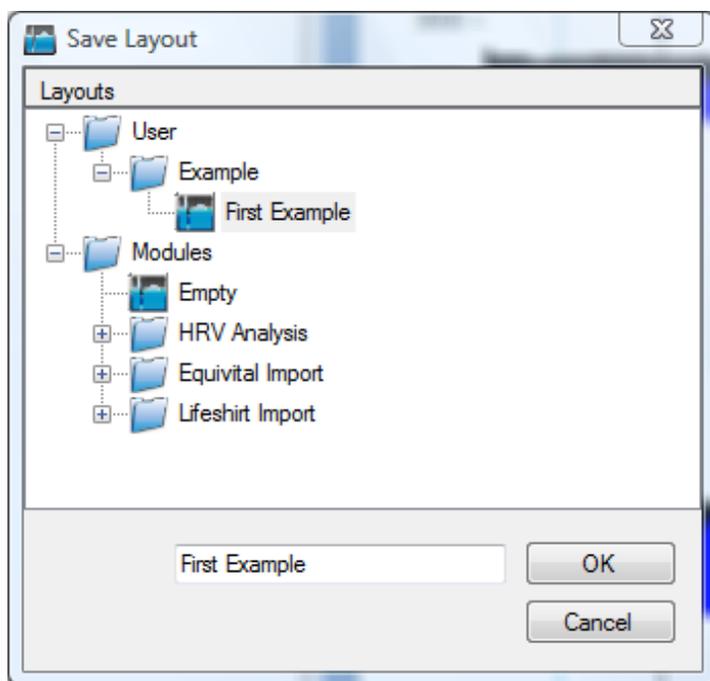


Figure 11: First Example Layout

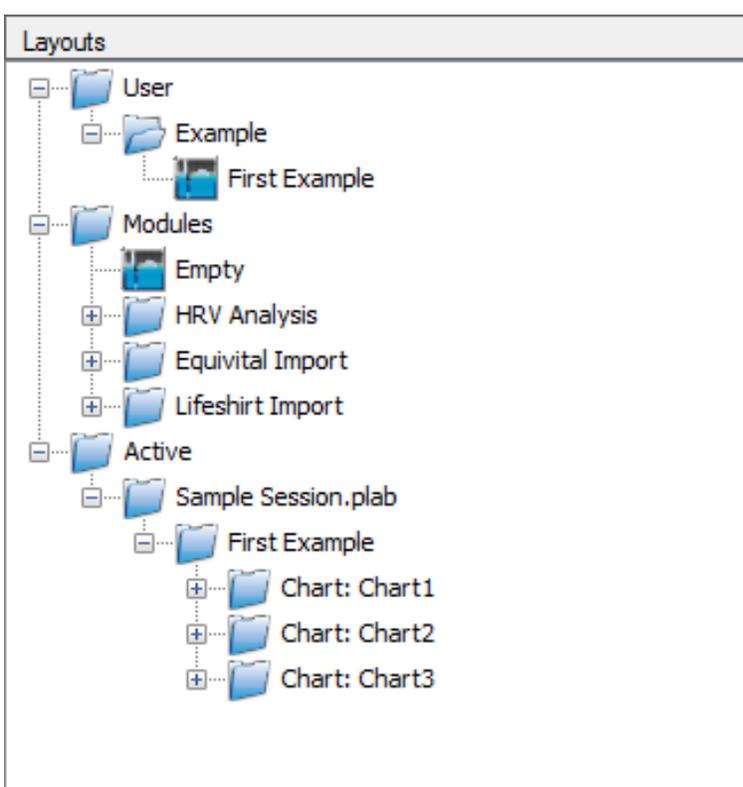


Figure 15: New Layout Appears in the Data Explorer