

One of the latest features of LabChart v6.1.1 for Windows is to perform signal averaging either by the number of samples or by time. Signal averaging can be performed using the Smoothing feature from Channel Calculation or the drop-down menu of each channel.

Signal Averaging by the Number of Samples

- First select an unused channel that does not contain any recorded data
- Select the Smoothing feature from Channel Calculation or the drop-down menu (Figure 1)
- Select Averaging (decimation) option from the list of Smoothing types (Figure 2)
- Select Samples in the Window width and enter the number of samples

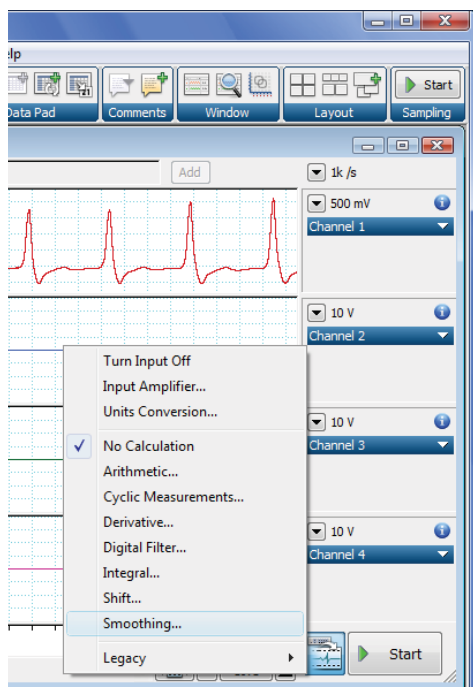


Figure 1: Selecting the Smoothing feature

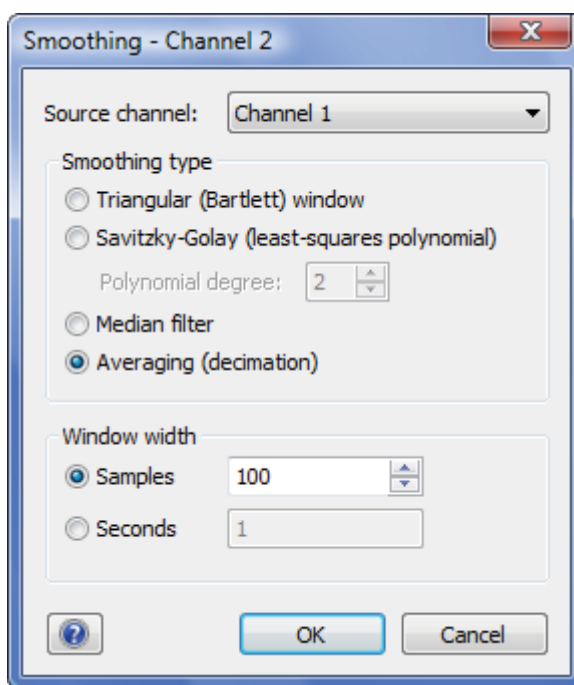


Figure 2: Smoothing dialog showing the Averaging (decimation) option

Choosing Samples displays the average of the source channel based on the number of samples. For example, if 100 samples were selected, Channel 2 calculates a 100 sample point average of the signal in Channel 1. If the data is recorded at 1 kHz (1000 samples/sec), the result in Channel 2 is a 0.1 s average of Channel 1 in real-time. Conversely, a 0.25 s average of a signal recorded at 1 kHz requires the number of Samples to be 250.

Signal averaging of 0.1 sec, 0.25 sec, 0.5 s, and 1.0s from a signal can be calculated as shown in figure 3.

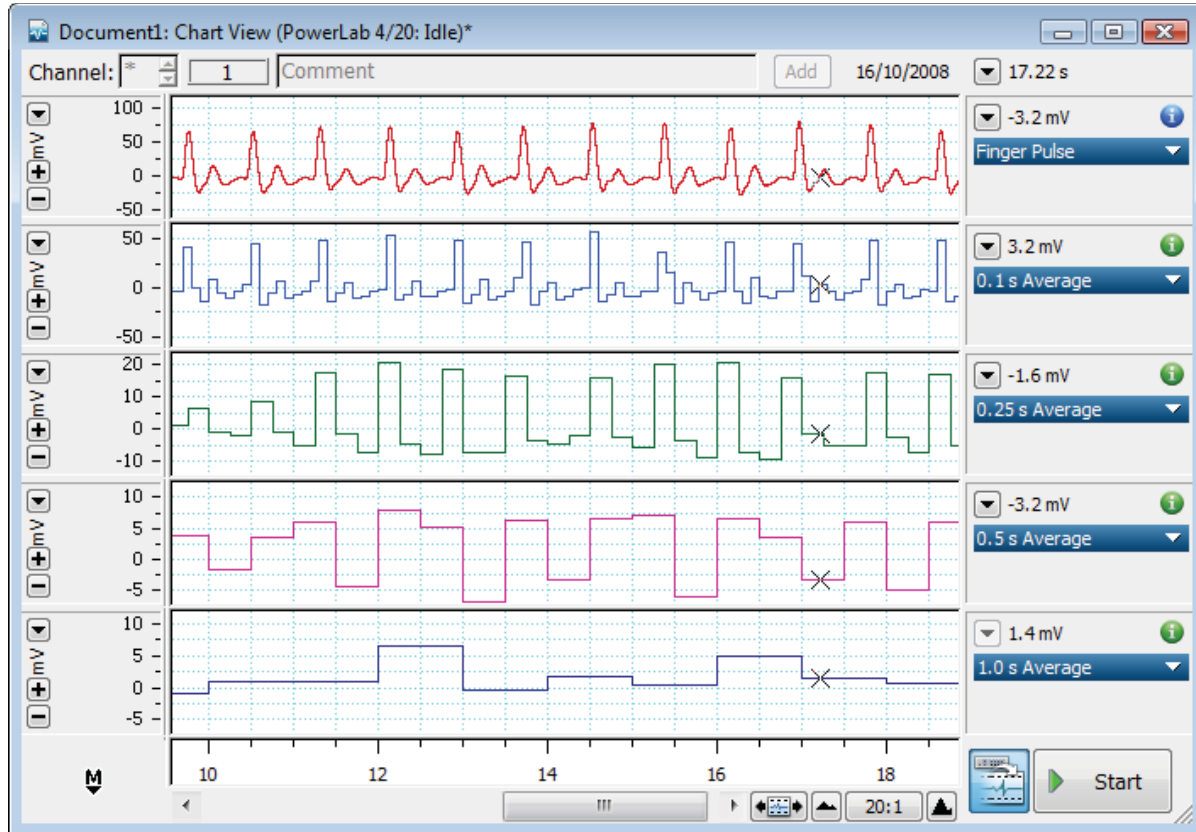


Figure 3: Time-based signal averaging of Channel 1 in intervals of 0.1 s, 0.25 s, 0.5 s and 1.0 s in Channel 2 to Channel 5 respectively

Signal Averaging by Time

There is also an option of averaging the signal using time rather than the number of sample points.

- First select an unused channel that does not contain any recorded data
- Select the Smoothing feature from Channel Calculation or the drop-down menu (Figure 1)
- Select Averaging (decimation) option from the list of Smoothing types
- Select Seconds in the Window width and type in the number of seconds

Averaging (decimation) provides time-based signal averaging of data in the source channel based on time or samples.

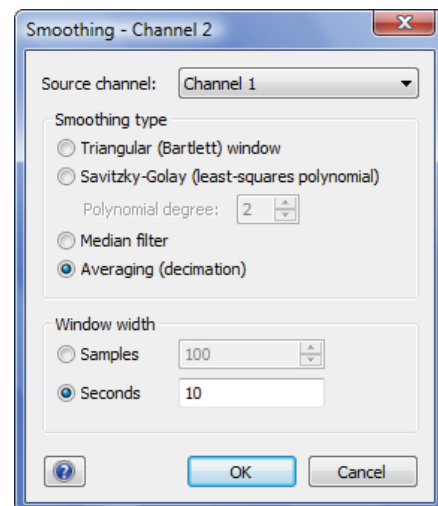


Figure 4: Selecting Seconds for the Averaging (decimation) option in the Smoothing dialog