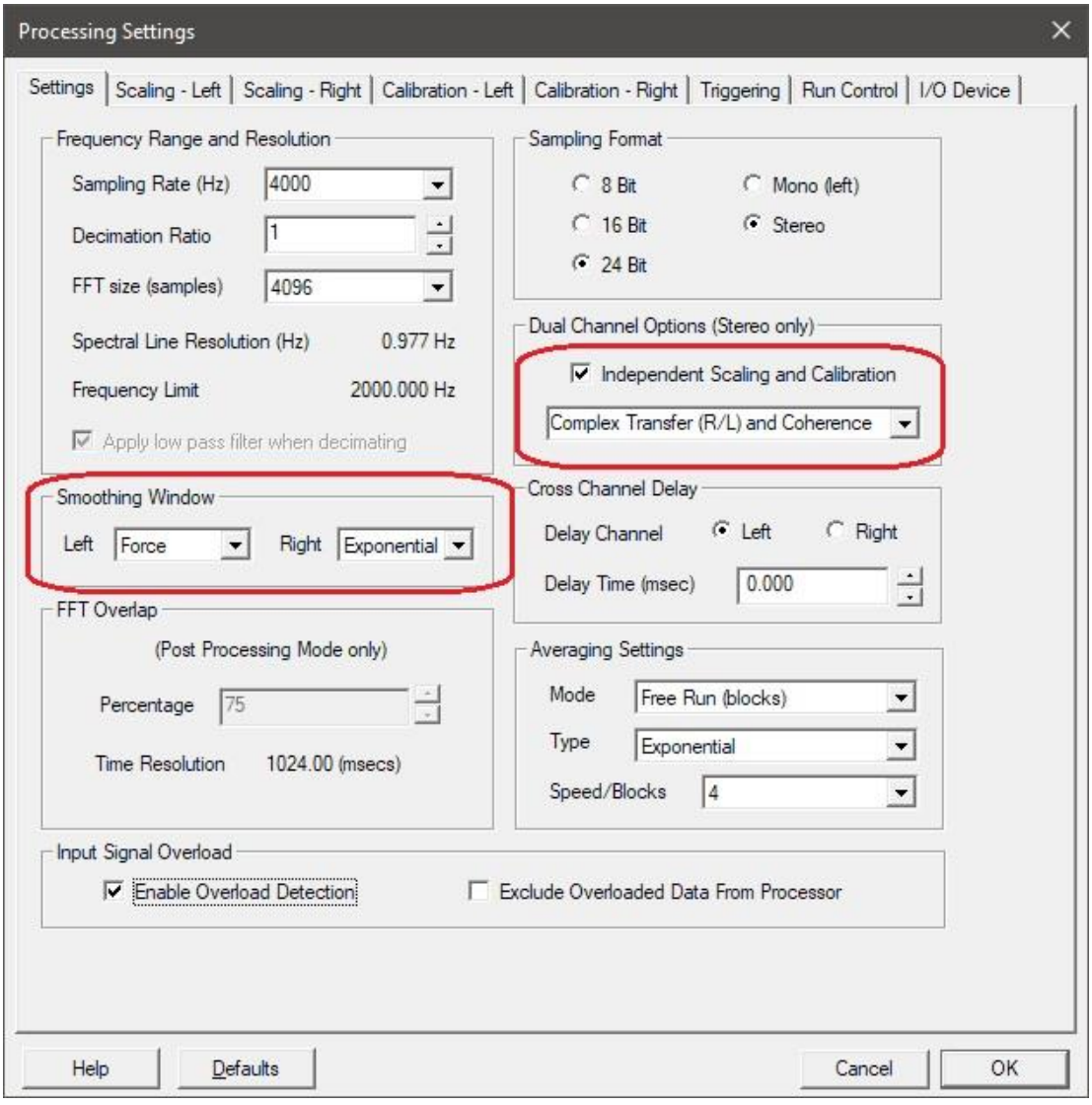
SpectraPLUS-SC Impact Hammer test example setup

This example uses a SpectraDAQ-200 data acquisition module and has an impact hammer connected to the left input channel and an accelerometer connected to the right input channel.

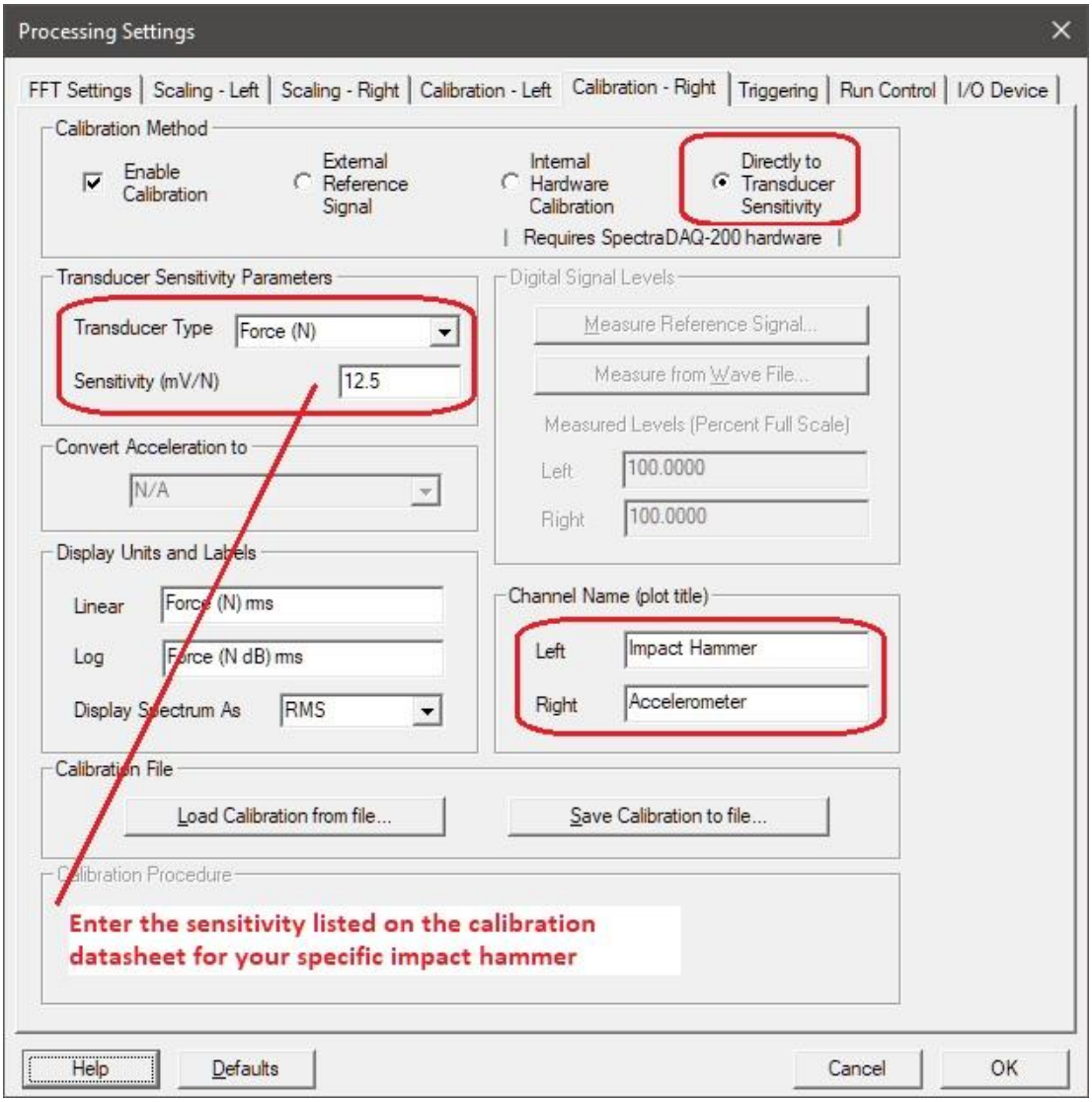
The <Options>Processing Settings> menu brings up the main setup dialog box. The following screen shots are an example of typical settings.

The sampling rate is low because we are generally only concerned with low frequencies.

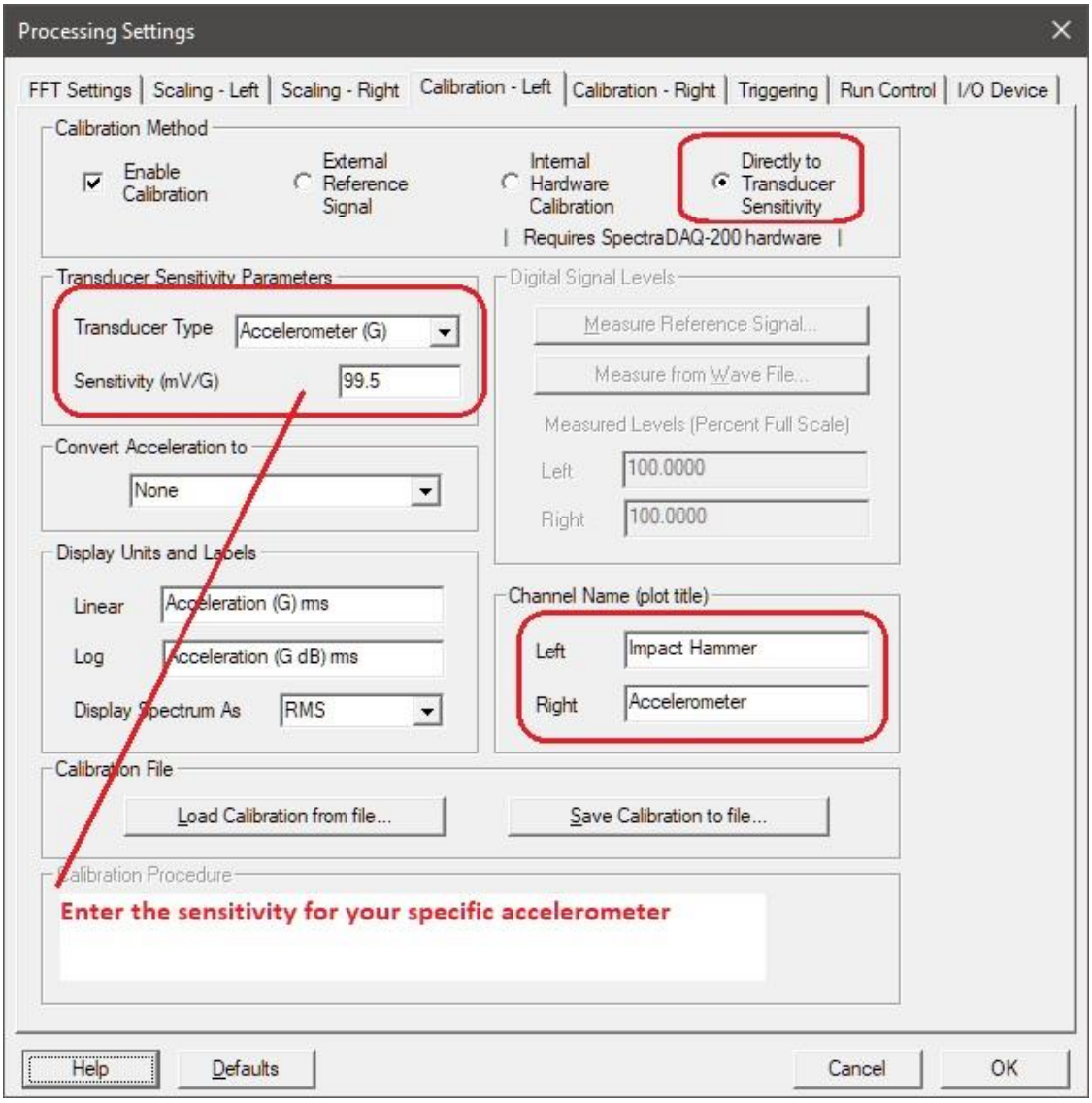
A Force smoothing window is used for the force sensor in the impact hammer and an Exponential smoothing window for the accelerometer channel.

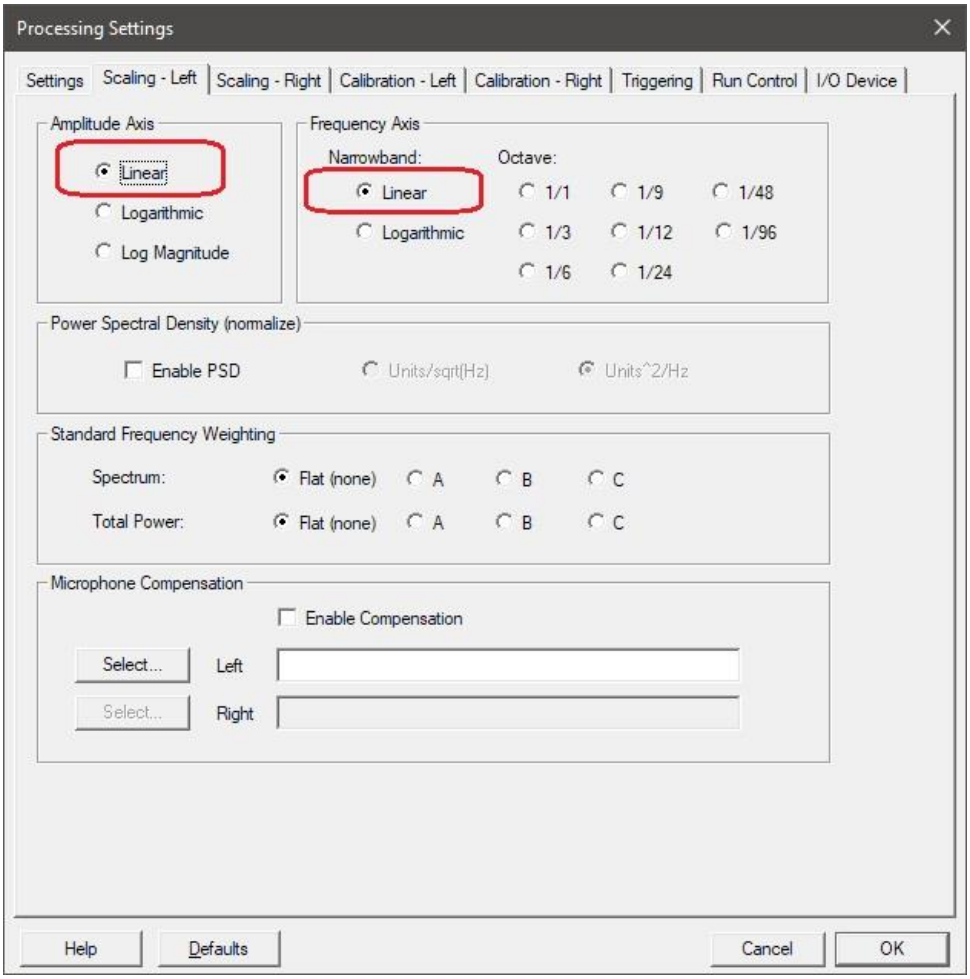


Calibration setup for the impact hammer that is connected to the left input channel

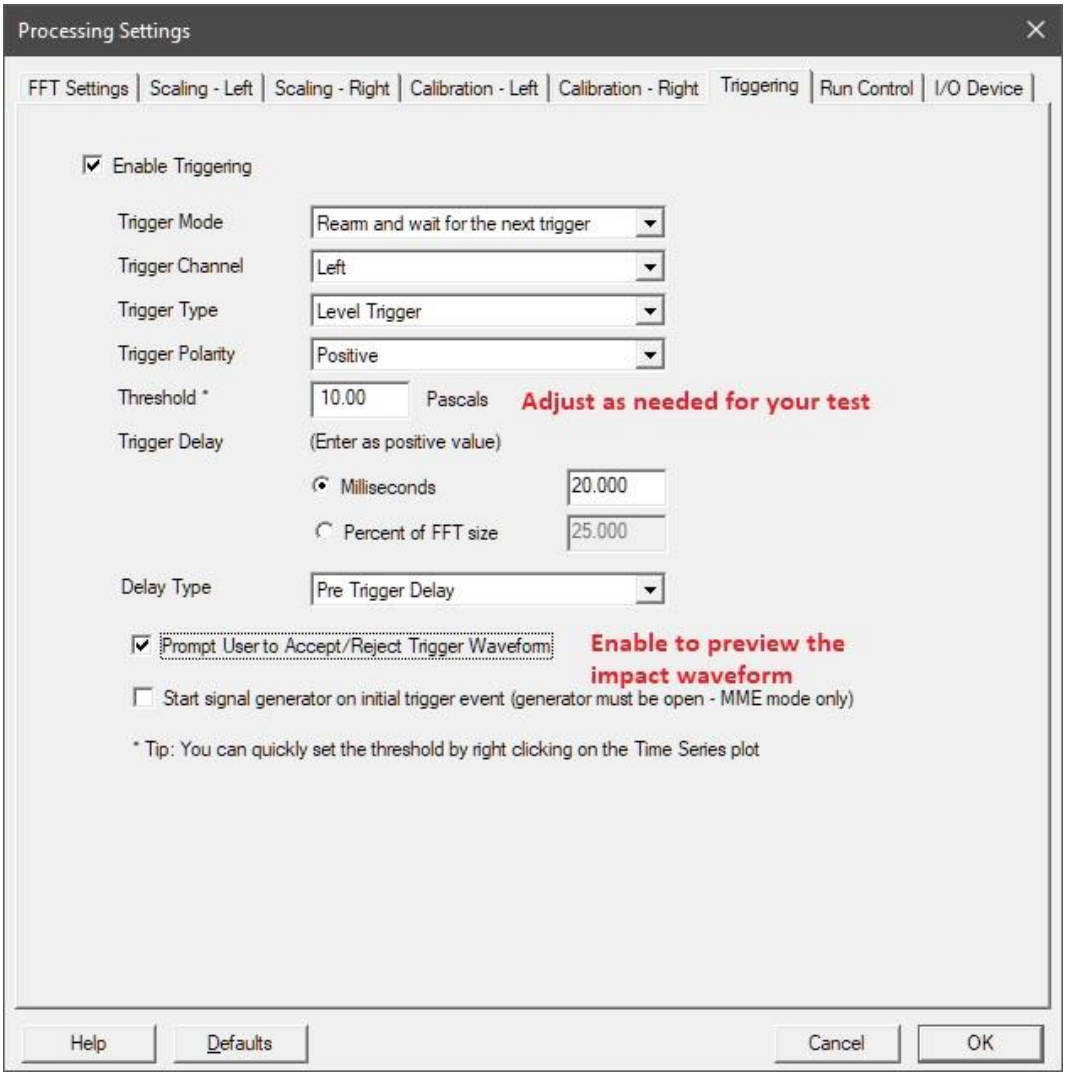


Calibration setup for the accelerometer that is connected to the right input channel



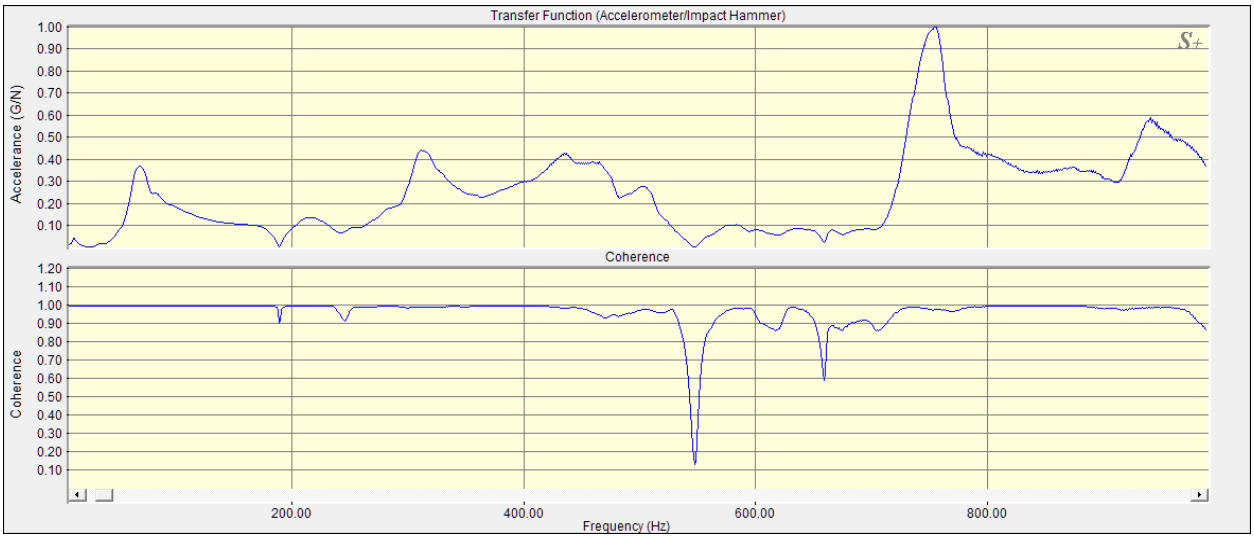


The Right channel is scaling is also set to Linear/Linear



Triggering is necessary so that the measurement is performed only on the impact and acceleration data. Otherwise the results are meaningless.

The screen shot below shows the transfer function between the Accelerometer and the Impact Hammer (Acceleration (G) vs Force (N)). The Coherence is displayed on the lower plot.



The transfer function these two channels produces a plot of Accelerarance (acceleration/force)

It is also possible to convert the acceleration to Velocity or Displacement using the "Convert Acceleration To" list box on the Calibration dialog box. This produces the following plots:

Mobility = velocity / force

Compliance = displacement / force