

## Impact Hammer Modal testing using a 485B39

This example has the accelerometer connected to the 485B39 input channel 1 (left) and the impact hammer force sensor connected to input channel 2 (right).

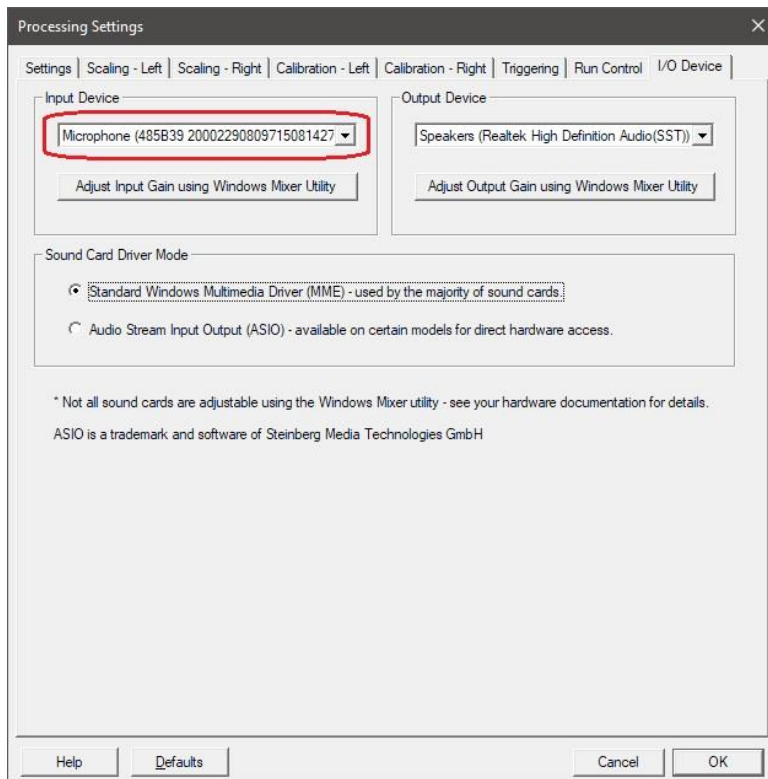
Open SpectraPLUS-SC

Click <Config><Load Configuration> menu and select:

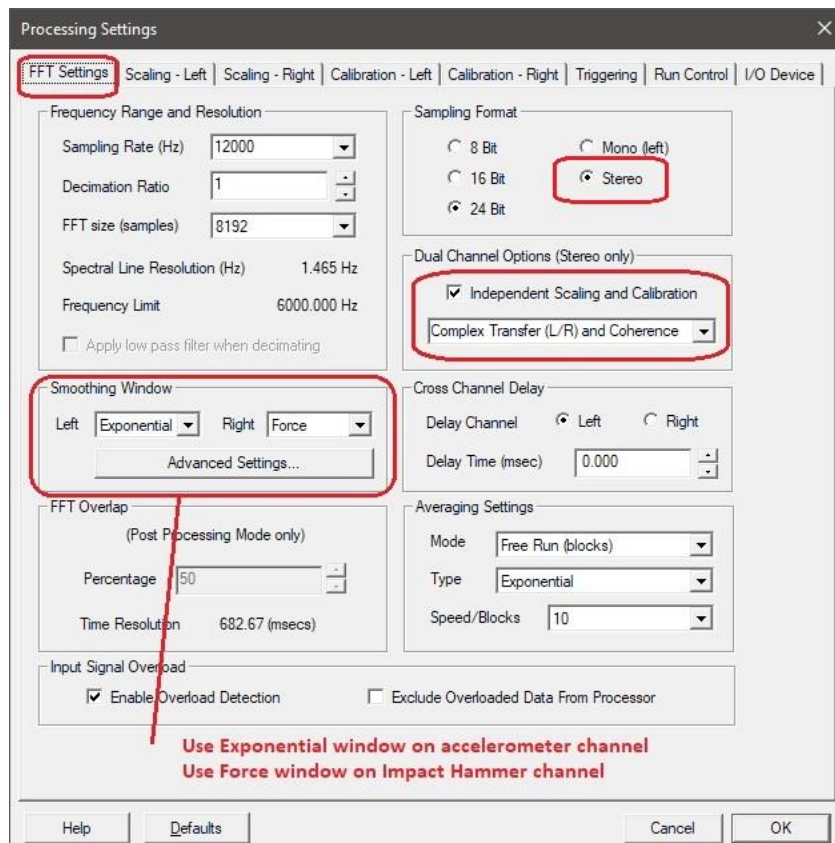
**Impact Hammer Modal testing with 485B39.cfg**

Click the <Options><Processing Settings> menu

Go to the “I/O Device” tab and select the 485B39 as the input device

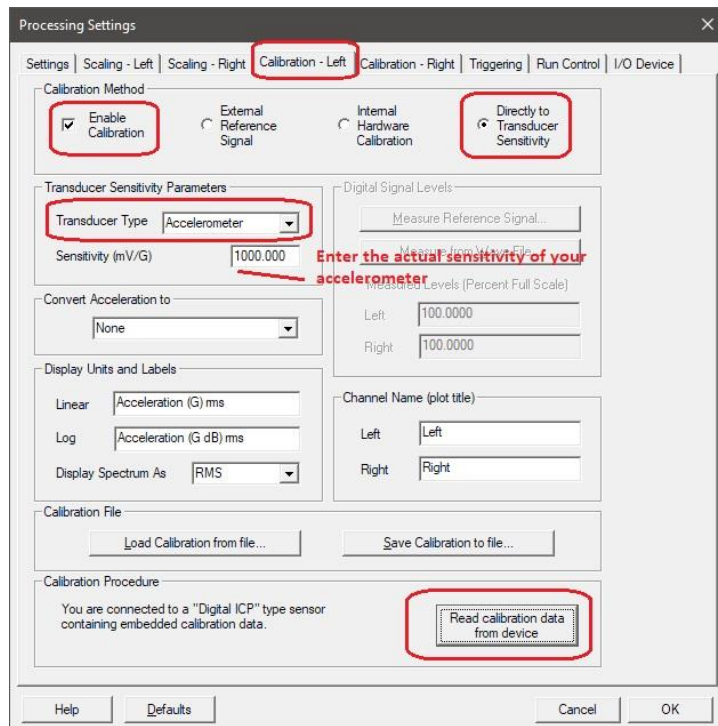


Go to the “FFT Settings” tab and set it up for dual channel operation and enable independent calibration settings for each channel. Also set the separate smoothing windows for the accelerometer and force channels. Select the option to produce the Transfer Function of the Left vs Right channels and also the Coherence plot.



Go to the “Calibration – Left” tab. Enter the specific transducer sensitivity for the accelerometer that you have connected to the Left channel (1) of the 485B39.

Press the “Read calibration data from device” button – this will read the cal data from the 485B39 and apply it.



Go to the “Calibration – Right” tab and repeat the steps for the Impact Hammer Force sensor connected to the right channel (2) of the 485B39. Press the “Read calibration data from device” button – this will read the cal data from the 485B39 and apply it.

Processing Settings

FFT Settings | Scaling - Left | Scaling - Right | Calibration - Left | **Calibration - Right** | Triggering | Run Control | I/O Device

Calibration Method

☒ Enable Calibration ☐ External Reference Signal ☐ Internal Hardware Calibration ☒ Directly to Transducer Sensitivity

Transducer Sensitivity Parameters

Transducer Type: Force (N)

Sensitivity (mV/N): 100.00000

Digital Signal Levels

Measure Reference Signal...

Measure from Wave File...

Right: 100.0000

Convert Acceleration to: N/A

Display Units and Labels

Linear: Force (N) ms

Log: Force (N dB) ms

Display Spectrum As: RMS

Channel Name (plot title)

Left: Left

Right: Right

Calibration File

Load Calibration from file... Save Calibration to file...

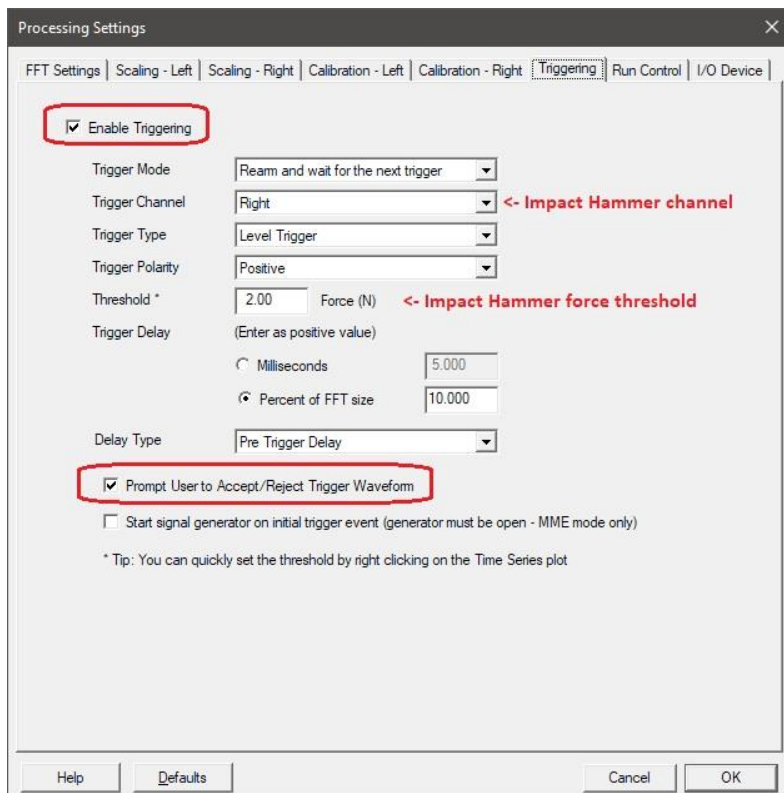
Calibration Procedure

You are connected to a "Digital ICP" type sensor containing embedded calibration data.

Read calibration data from device

Help Defaults Cancel OK

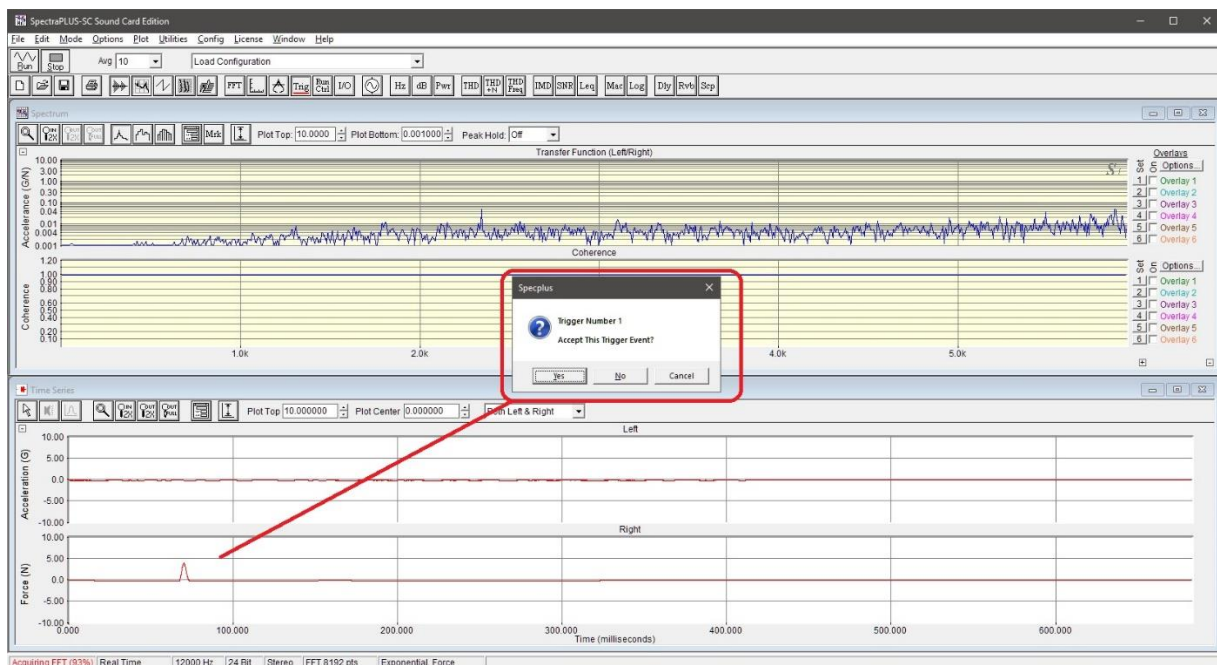
Go to the "Triggering" tab of the processing settings dialog box



Set the desired trigger threshold and delay settings. Enable the option to prompt you to preview the trigger waveform and allow you to accept or reject it from the spectral average.

Press Ok to close the processing settings dialog box.

Press the “Run” button on the main application toolbar to start processing data.



When the trigger conditions are satisfied you will see the resulting waveform and prompted to accept or reject it. Continue until you have collected a sufficient number of clean impact events. The top spectrum plot contains the transfer function (FRF - frequency response function) between the accelerometer and impact hammer channels. The lower plot displays the coherence of the channels.

Change to the <Mode><Recorder> will allow you to record the data and save it to a file. Use the <Mode><Post Processing> menu to open existing files for post analysis.

**Analysis tips:**

Right click on the plot and choose the <Copy as Bitmap> menu. Then paste the plot image into Word/Excel or other application for creating reports.

Right click on the Spectrum plot and choose the <Copy as Text> menu. Then paste the underlying spectral data into Excel for further analysis or custom plotting.

The Overlay controls located on the right side of the plot allow you to create static traces of the current spectral data for comparison purposes.

See <https://www.spectraplus.com/Videos.htm> for helpful tips and demos