

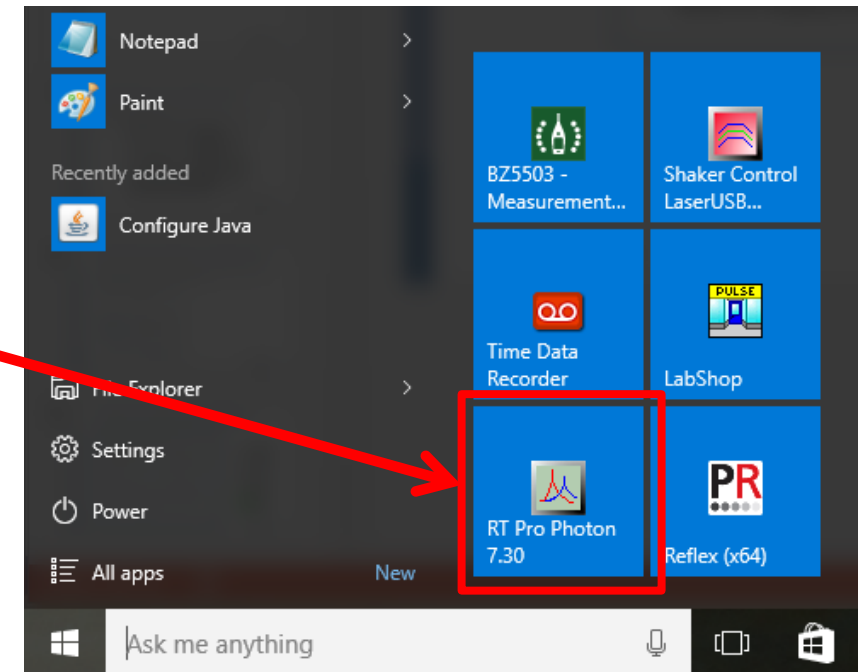
# RT Pro for PHOTON+

## What's New in 7.3?

**This version is a maintenance release, which includes bug fixes and minor enhancements.**

# PC Requirements: Windows 10 compatibility

- RT Pro 7.3 is now factory tested for compatibility with Windows 10 Professional 64-bit.



# Signal Analysis: Automated Testing Relationship improvement

- Use of FFT(f) Amplitude and/or Phase for Automated Testing Relationships
  - Prior to 7.3, only Real and Imaginary data could be tested against.

The screenshot displays the software interface for automated testing. On the left, the 'Relationship Settings' dialog is open, showing the configuration for 'ForceRelationship\_1'. The 'Signal to be tested' is set to 'FFT1(f)', and both 'phase' and 'Amplitude' are checked. The 'Limiting Signal' is 'ForceLimitSignal\_1' set as a 'High Limit'. The 'Run Log' at the bottom shows a failure at 13:38:00 with a 37.4% failure rate. The control panel on the right shows 'Limit Exceeded!' and 'Start' and 'Init.' buttons.

**Relationship Settings**

Relationship Name: ForceRelationship\_1

Select the type of Limit to be used for the test

Limiting Signal  Signal Characteristic

Set the limit ForceLimitSignal\_1 as a High Limit for the test signal.

Signal to be tested: FFT1(f)  phase  Amplitude

Select the range of values to be included in the test relationship

Whole Range  Specific Range

If 80 % of the points in the specified range fail, then take the following

Actions

Abort Measurement  Generate Quick Report

Alarm on Control Panel  Source On  Auto. Save Signal

Runlog Message default  Make PC Beep

Send Email (Email setup in Preferences page)  Group Entries (minimizes runlog size)

Save Circular Buffer Signals

OK Cancel

**7.3 RC1 - FFT - Automated Testing using Linear Spectrum FFT(f) signal.prj: FFT1(f)\_0**

Newton pk FFT1(f) ForceLimitSignal\_1

1778.000  
10.0000  
1.0000  
0.1000  
0.0100  
0.0010  
0.0001

Frequency (Hz)

3 10 100 1000 2248

**7.3 RC1 - FFT - Automated Testing using Linear Spectrum FFT(f) signal.prj: FFT1(f)\_0**

Degree FFT1(f) ForceLimitSignal\_1

240.0  
200.0  
100.0  
0  
-100.0  
-200.0  
-240.0

Frequency (Hz)

3 10 100 1000 2248

**7.3 RC1 - FFT - Automated Testing using Linear Spectrum FFT(f) signal.prj: Run Log**

Entry Time	Source	Description
13:30:51, Apr 22, 16	User Command	Stop the Test
13:32:08, Apr 22, 16	User Command	Stop the Test
13:32:33, Apr 22, 16	User Command	Stop the Test
13:33:26, Apr 22, 16	User Command	Stop the Test
13:37:45, Apr 22, 16	Control	FFT1(f): ForceRelationship_1 failed! Fail%: 90.1%
13:37:52, Apr 22, 16	Control	FFT1(f): ForceRelationship_1 failed! Fail%: 37.8%
13:37:59, Apr 22, 16	Control	FFT1(f): ForceRelationship_1 failed! Fail%: 37.4%
13:38:00, Apr 22, 16	Control	FFT1(f): ForceRelationship_1 failed! Fail%: 37.4%

**7.3 RC1 - FFT ...**

1.00 10.00 2  
0.10 1.00  
0.01 0.10  
0V 0V  
-0.01 -0.10  
-0.10 -1.00  
-1.00 -10.00

Elapsed Time 00:00:14

Measure

Signals Waterfall

Analysis

Lines 800 Points 2048

Span 2000 deltaT 195.3

Center Freq. 0

Frames Multiple

Window Hanning

Channel Trigger Average

Activity Average reached

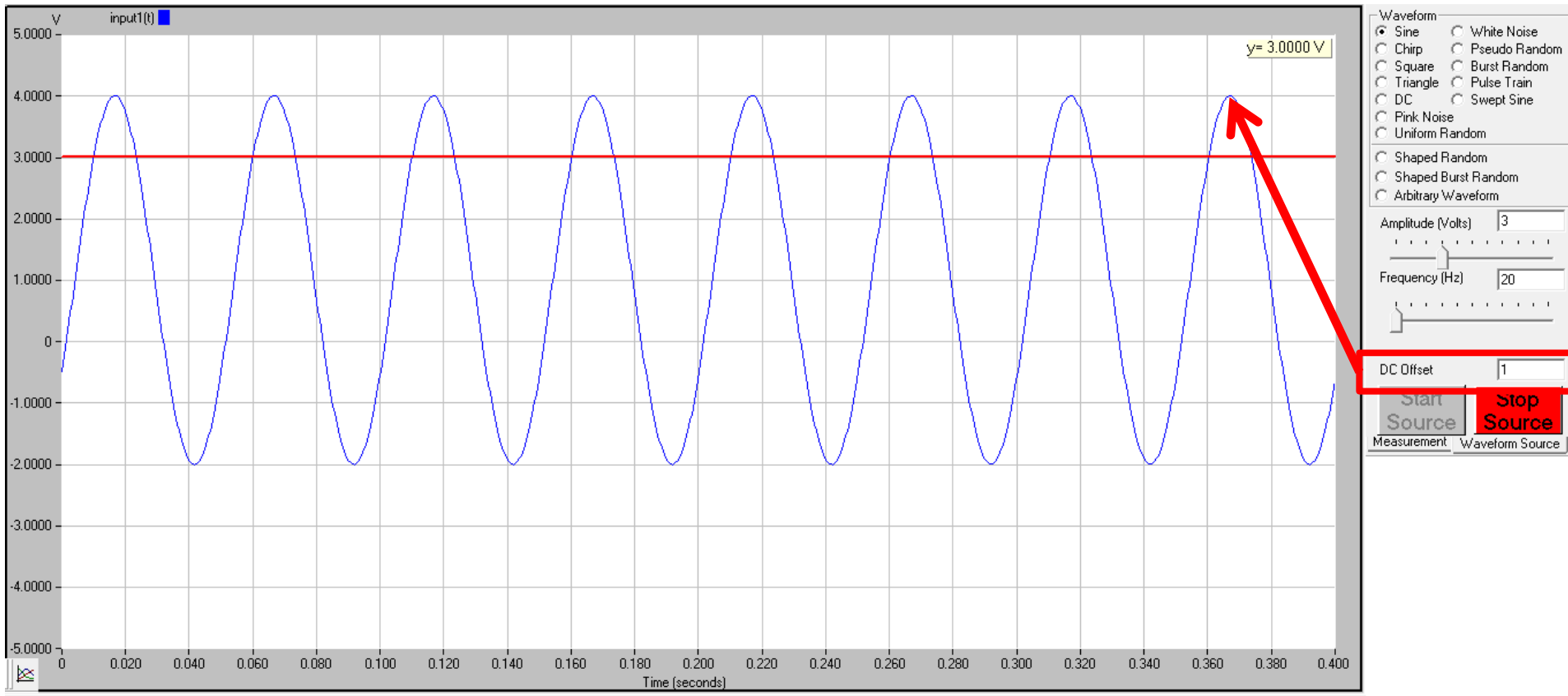
Limit Exceeded!

Start Init. Pause Continue

Measurement Waveform Source

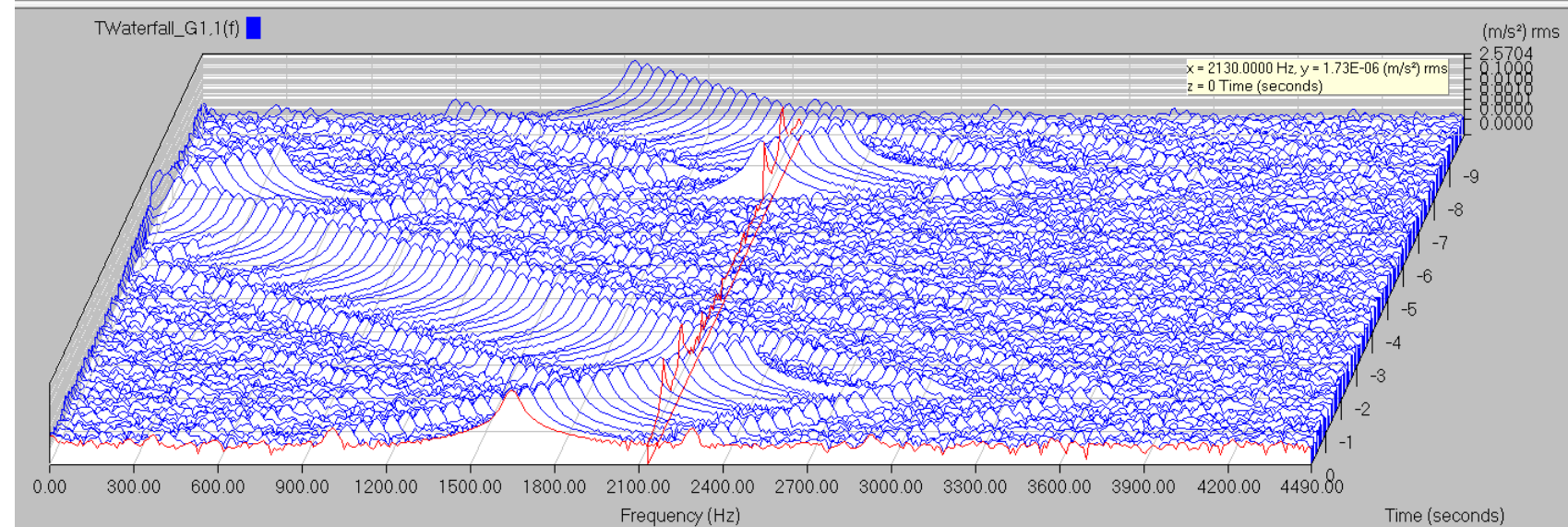
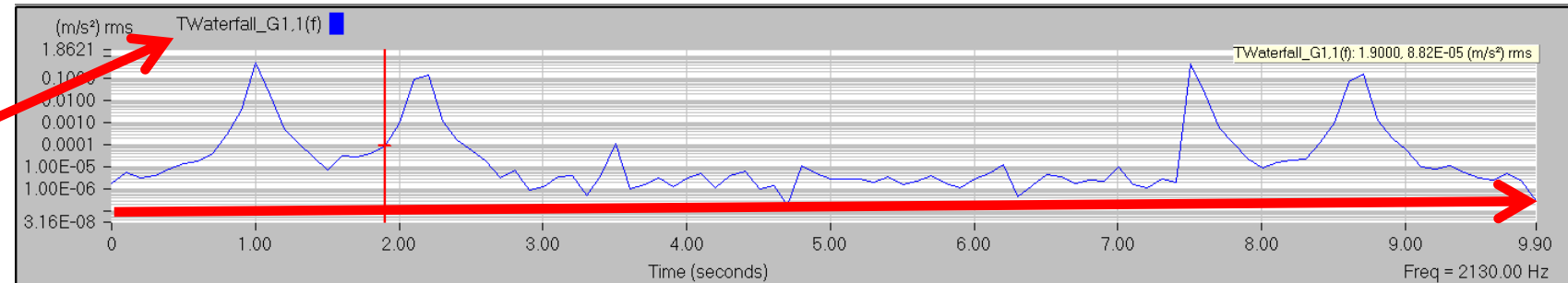
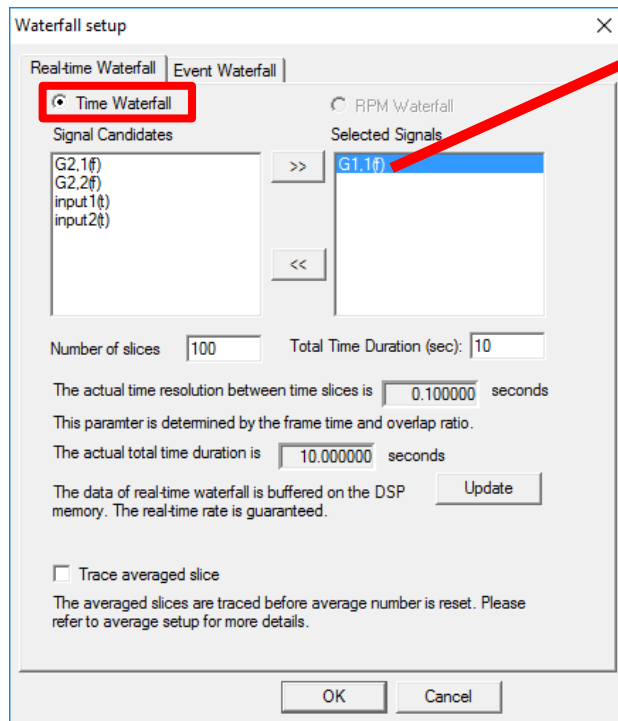
# Signal Analysis: Source/Generator DC offset parameter

- "DC Offset" parameter now available on Waveform Source/Generator panel
  - Prior to 7.3, "DC Offset" could only be set within embedded menus and dialog boxes.



# Signal Analysis: FFT Time Waterfall X Slice improvement

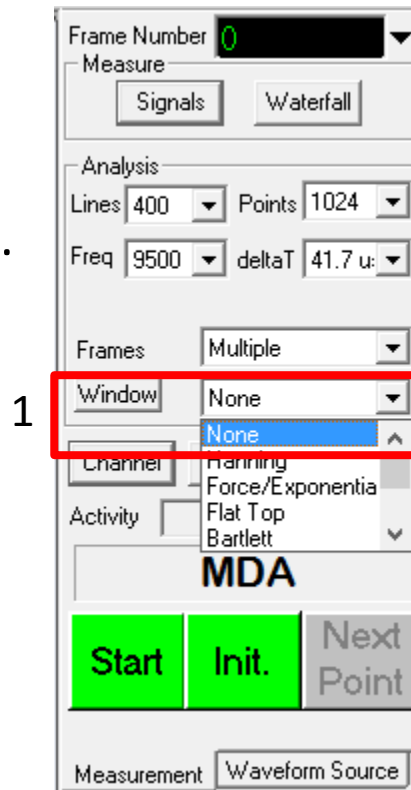
- Changed X Slice time data to scroll from left to right in FFT Time Waterfall to correlate with FFT Event Waterfall scrolling method



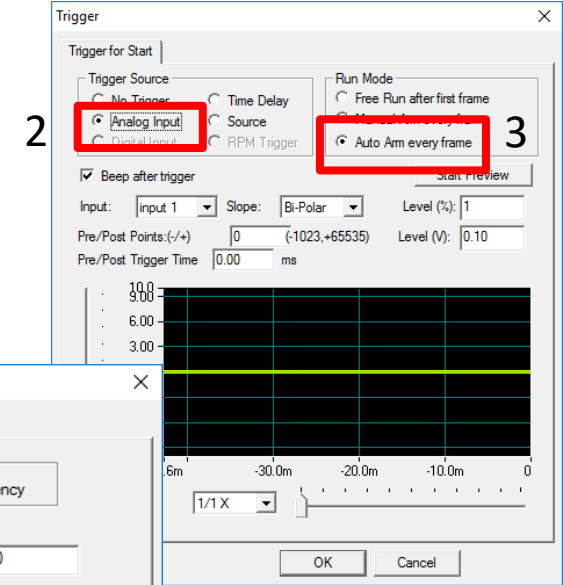
# Modal Data Acquisition: Real-time and Playback improvements

- MDA project default settings tailored for modal and structural applications to enable immediate, “out of the box” measurements.

1. Changed Measurement panel | Window function from "Hanning" to "None".
2. Changed Trigger | Trigger for Start | Trigger Source from "No Trigger" to "Analog Input" (for Real-time MDA) and from “No Trigger” to “File Input” (for Playback MDA).
3. Changed Trigger | Trigger for Start | Run Mode from "Free Run" to "Auto Arm every frame".
4. Changed Average | Settings | Average Type from "None" to "Linear".
5. Changed Channel Parameters | Inputs | Coupling from "AC" to "CCLD" (for Real-time MDA)

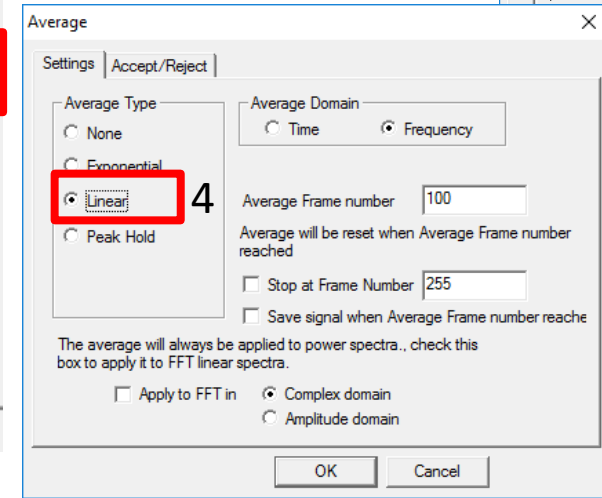


1

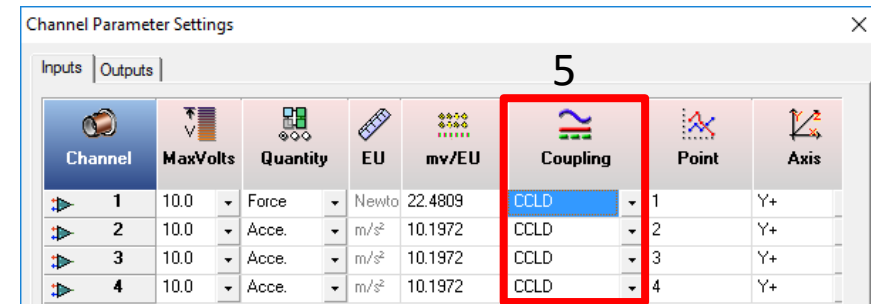


2

3



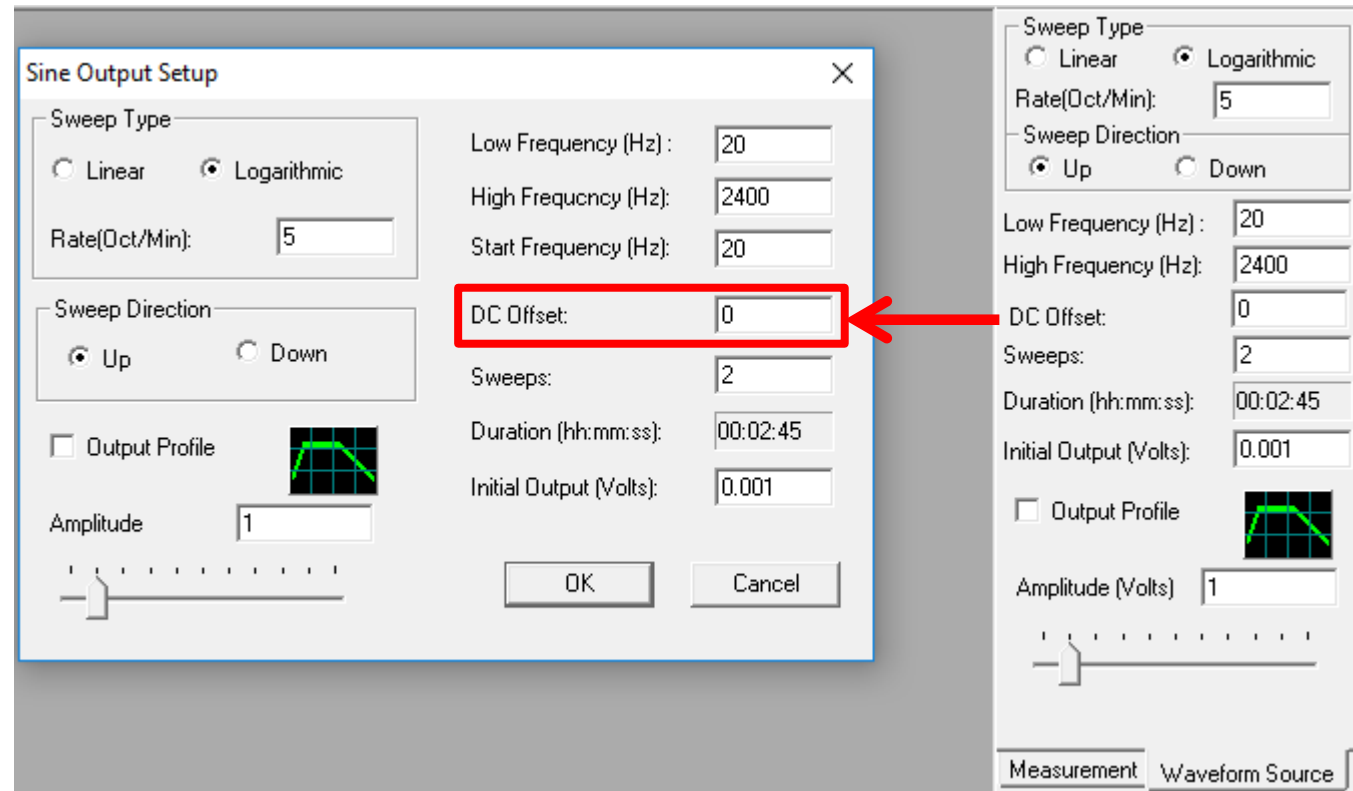
4



5

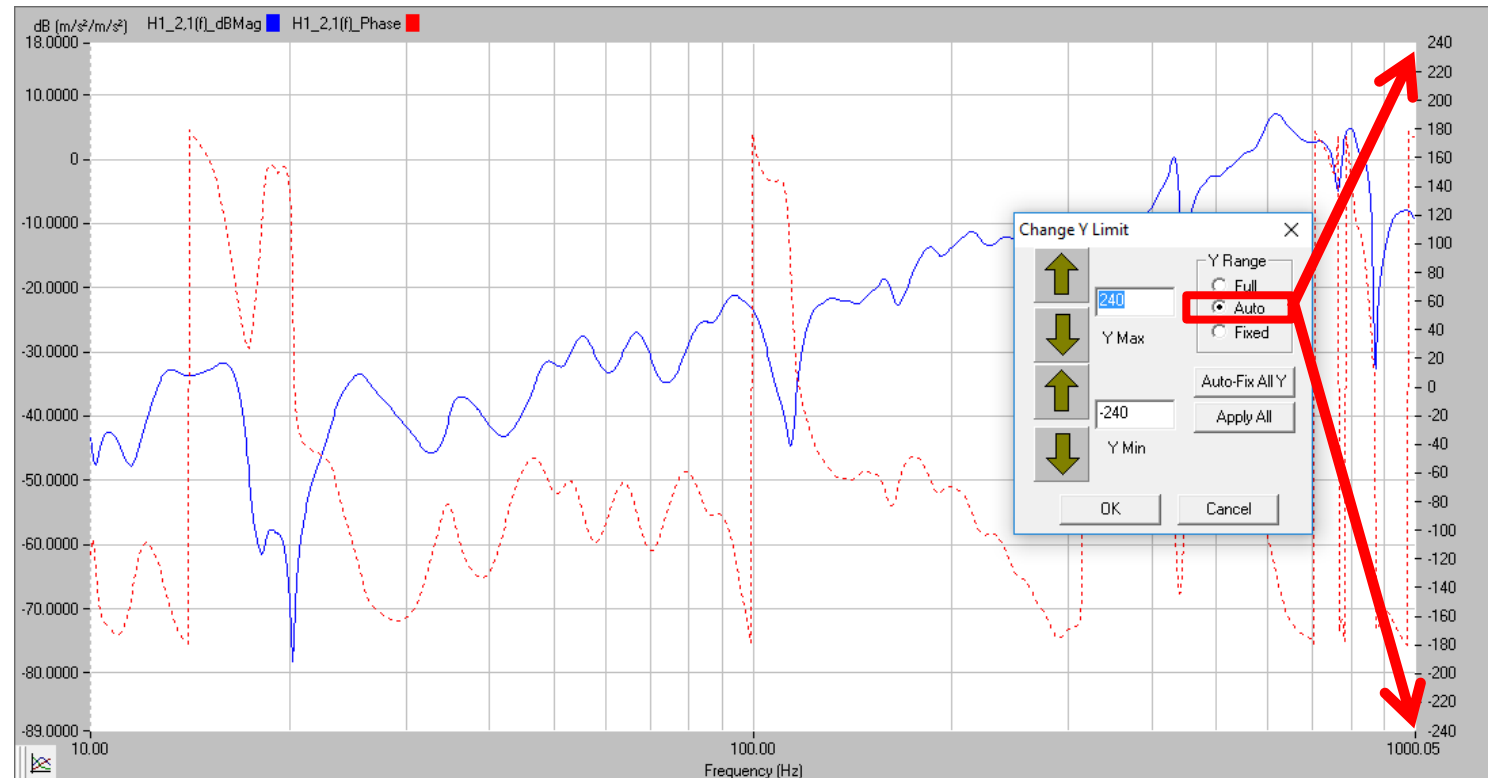
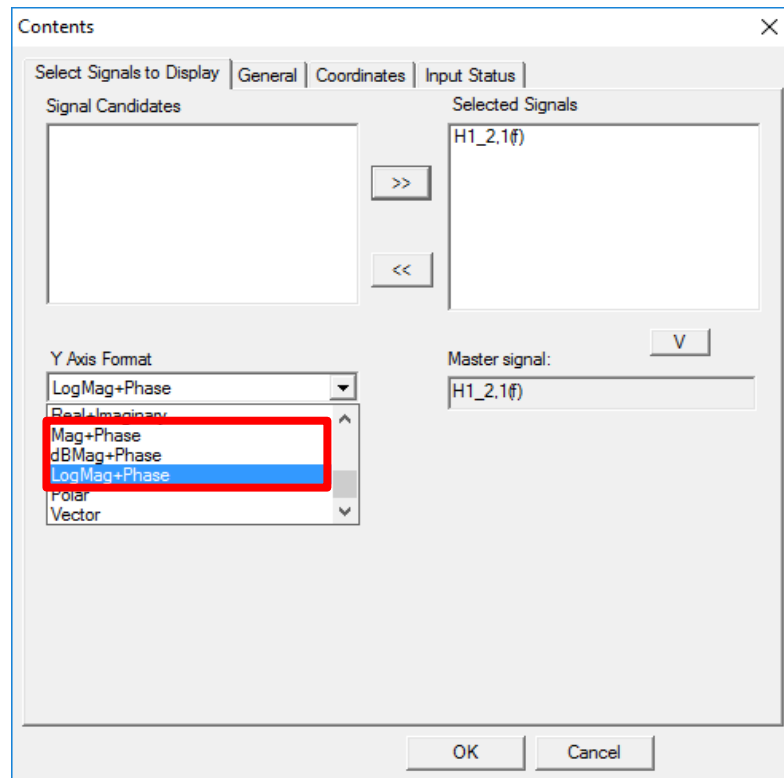
# Swept Sine Measurement: Source/Generator DC offset

- “DC Offset” parameter now available in Sine Output Setup dialog (found within Setup menu) and synchronized with Waveform Source/Generator panel.



# Swept Sine Measurement: FRF phase auto scaling improvement

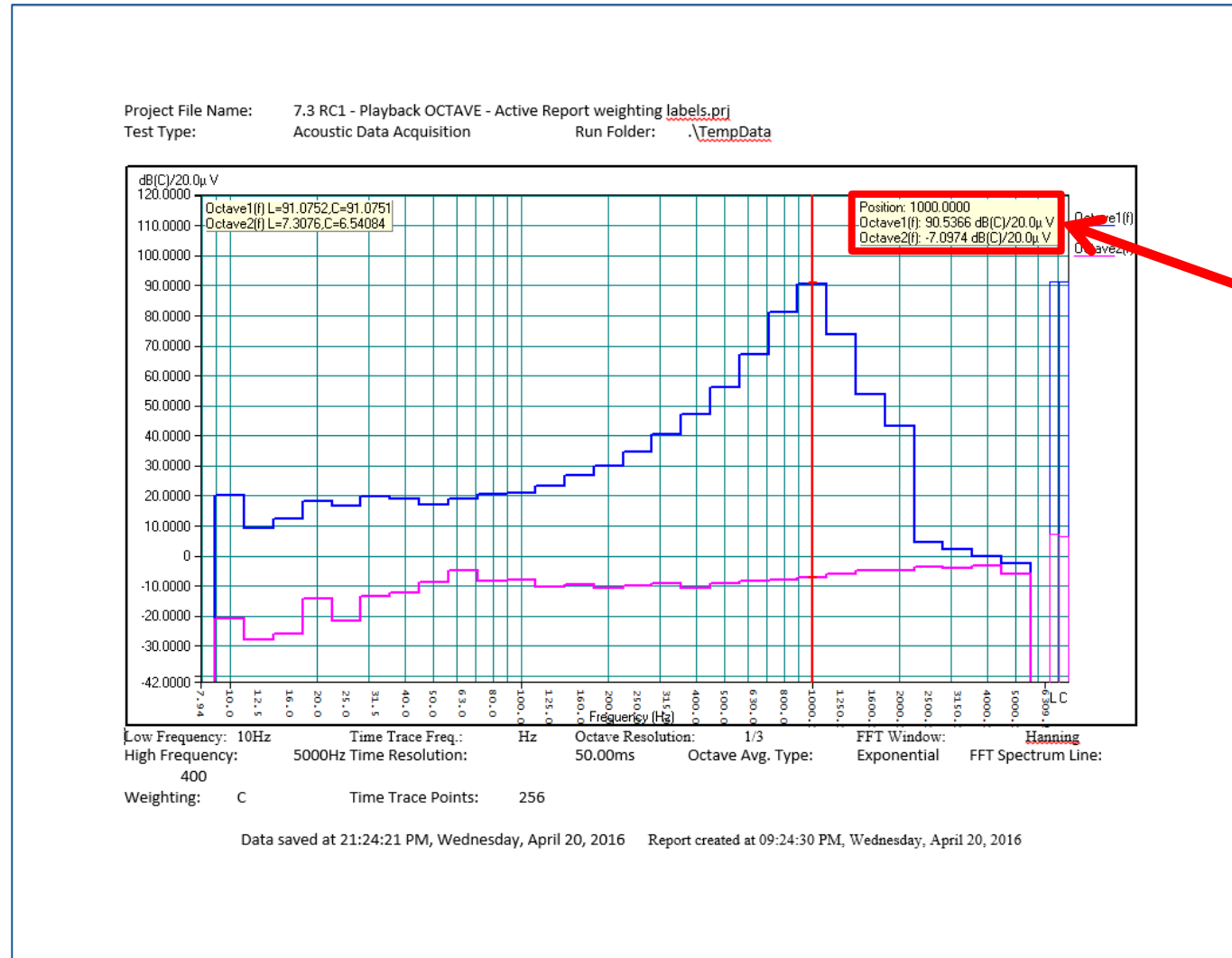
- FRF signals displayed in combined Y Axis Format (Amplitude and Phase) now has Phase auto scaling, with a consistent re-calculation of the Y scale





# Active Report: Acoustic (Octave) Analysis weighting labels

- Weighting labels now included in Cursor readout boxes



Elapsed Time 00:00:02

Signals Waterfall

Octave Analysis

Resolution 1/3

Low Frequency 10Hz

High Frequency 5000Hz

Weighting C

Trace

Freq. (Hz) dT Points

1000 50.00n 256

Input Average Trigger

Start (s) 0 End(s) 27.0469

Activity Meas. stopped

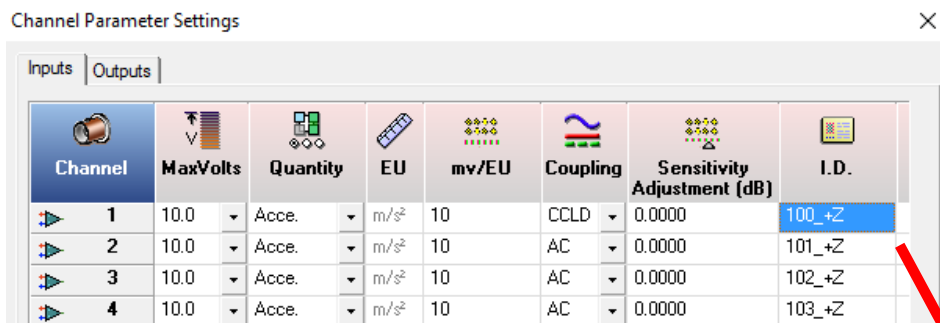
**Octave**

Start Stop Pause Continue

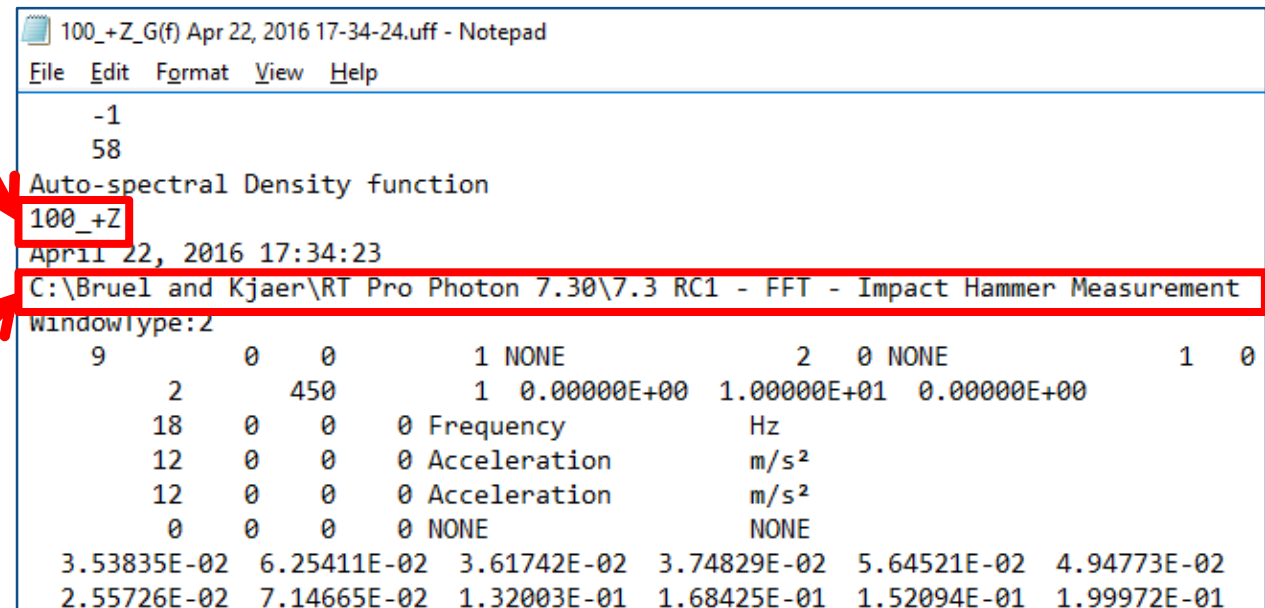
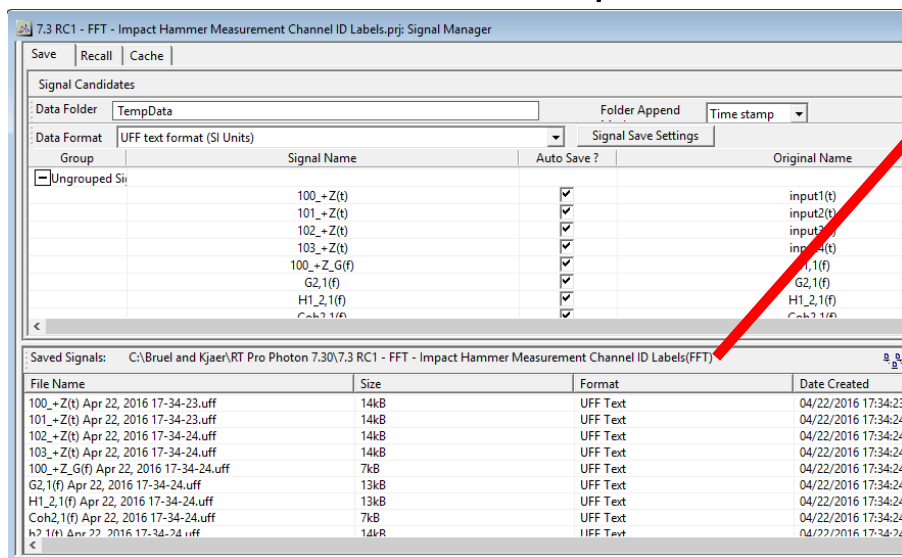
Measurement

# Data Export: UFF format enhancements

- Include **Channel Parameters "I.D."** label in the header of exported UFF files

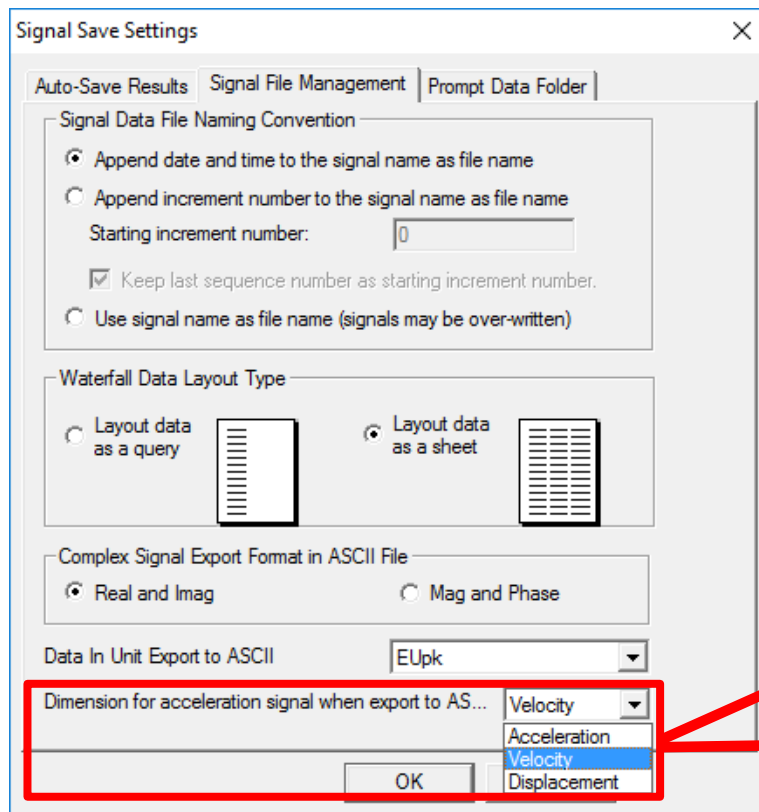


- Support saving **Data Folder and File Path** in row 6 of the header in the exported UFF files



# Data Export: ASCII format enhancements

- Enable saving/exporting acceleration measurements in velocity or displacement unit when saved in ASCII format

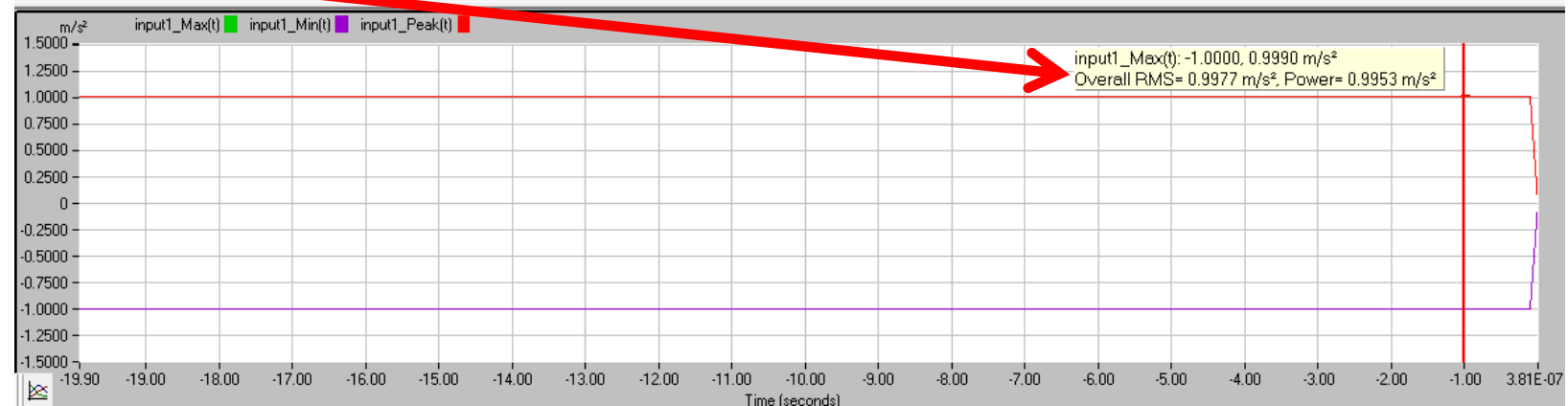
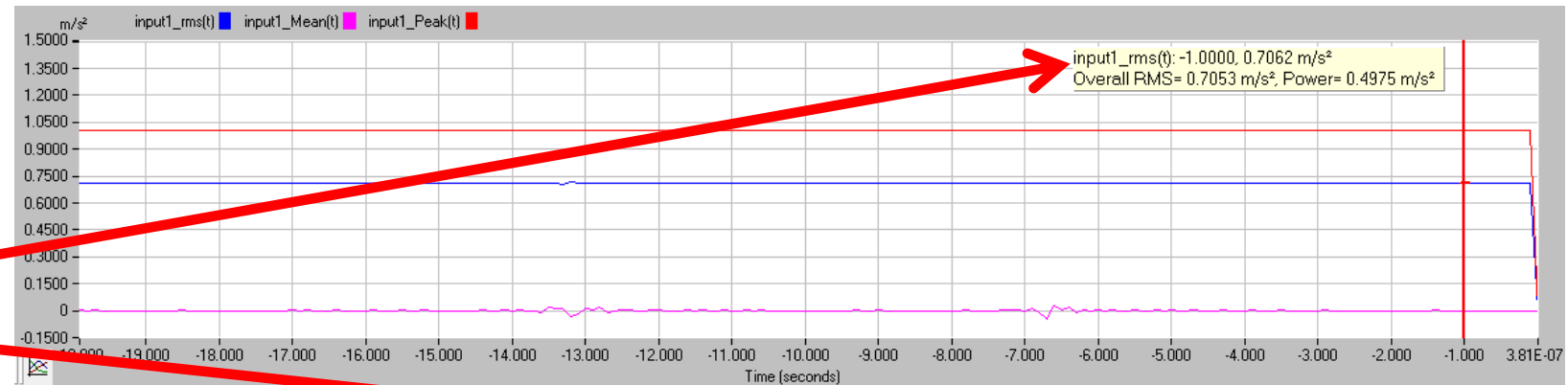
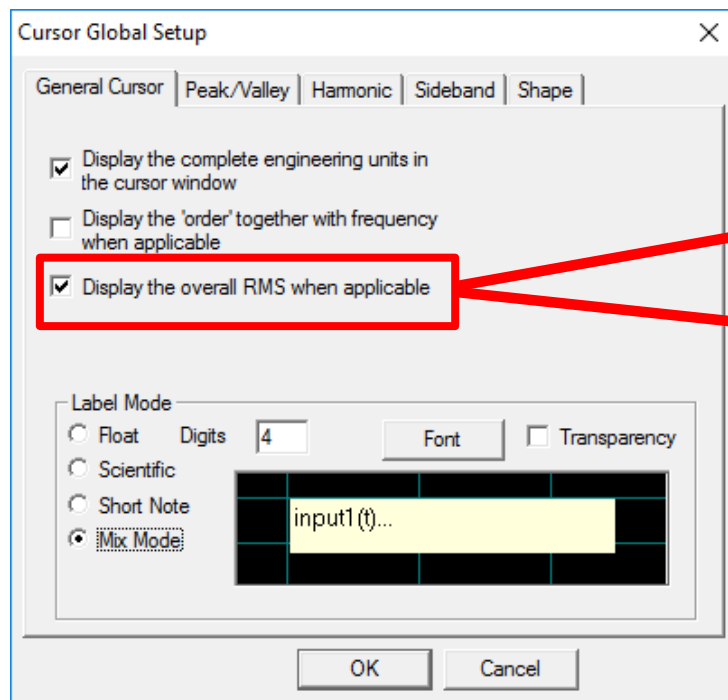


```
4535-B-accel-x(t) Apr 22, 2016 12-37-36.txt - Notepad
File Edit Format View Help
Header Length: 30
$$$Note: Please do not modify this file if you want to import it by Brüel & Kjær software. $$$
Generated from Brüel & Kjær RT Pro software.
Version 7.3000
Signal external name: 4535-B-accel-x(t)
Signal internal name: input2(t)
Data was generated at time: 12:36:39, April 22, 2016
Data was saved as file at time: 12:37:36, April 22, 2016
Data Type: Time History
Signal format: ASCII Tab Delimited 'X-Y Pair'
Sampling Frequency: 5120 Hz
Block size: 2048
Window type: Hanning
Z axis size: 1
X axis start value: 0
X axis increment (Delta): 0.0001953125
X axis increases by Linear step
Z axis start value: 0
Z axis increment (Delta): 1
Z axis increases by Linear step
Excitation Channel: None
Response Channel: Acceleration
Octave band: -1
Octave Low Frequency: 0 Hz
Octave High Frequency: 0 Hz
Octave Weighting: Linear
Is RPM Signal: 0
Data Layout Type: Sheet
Data Unit: 2
Data Unit Resolution: 1.000000e-001
Z axis index: 0
Value = 0.000000e+000
Y(in/s)
0.000000e+000 0.000000e+000
1.953125e-004 4.393414e-005
3.906250e-004 5.917862e-005
5.859375e-004 6.756194e-005
7.812500e-004 7.730472e-005
```

```
4535-B-accel-x(t) Apr 22, 2016 12-37-44.txt - Notepad
File Edit Format View Help
Header Length: 30
$$$Note: Please do not modify this file if you want to import it by Brüel & Kjær software. $$$
Generated from Brüel & Kjær RT Pro software.
Version 7.3000
Signal external name: 4535-B-accel-x(t)
Signal internal name: input2(t)
Data was generated at time: 12:36:39, April 22, 2016
Data was saved as file at time: 12:37:44, April 22, 2016
Data Type: Time History
Signal format: ASCII Tab Delimited 'X-Y Pair'
Sampling Frequency: 5120 Hz
Block size: 2048
Window type: Hanning
Z axis size: 1
X axis start value: 0
X axis increment (Delta): 0.0001953125
X axis increases by Linear step
Z axis start value: 0
Z axis increment (Delta): 1
Z axis increases by Linear step
Excitation Channel: None
Response Channel: Acceleration
Octave band: -1
Octave Low Frequency: 0 Hz
Octave High Frequency: 0 Hz
Octave Weighting: Linear
Is RPM Signal: 0
Data Layout Type: Sheet
Data Unit: 2
Data Unit Resolution: 1.000000e-001
Z axis index: 0
Value = 0.000000e+000
Y(in)
0.000000e+000 0.000000e+000
1.953125e-004 7.088631e-006
3.906250e-004 1.418304e-005
5.859375e-004 2.127976e-005
7.812500e-004 2.837435e-005
```

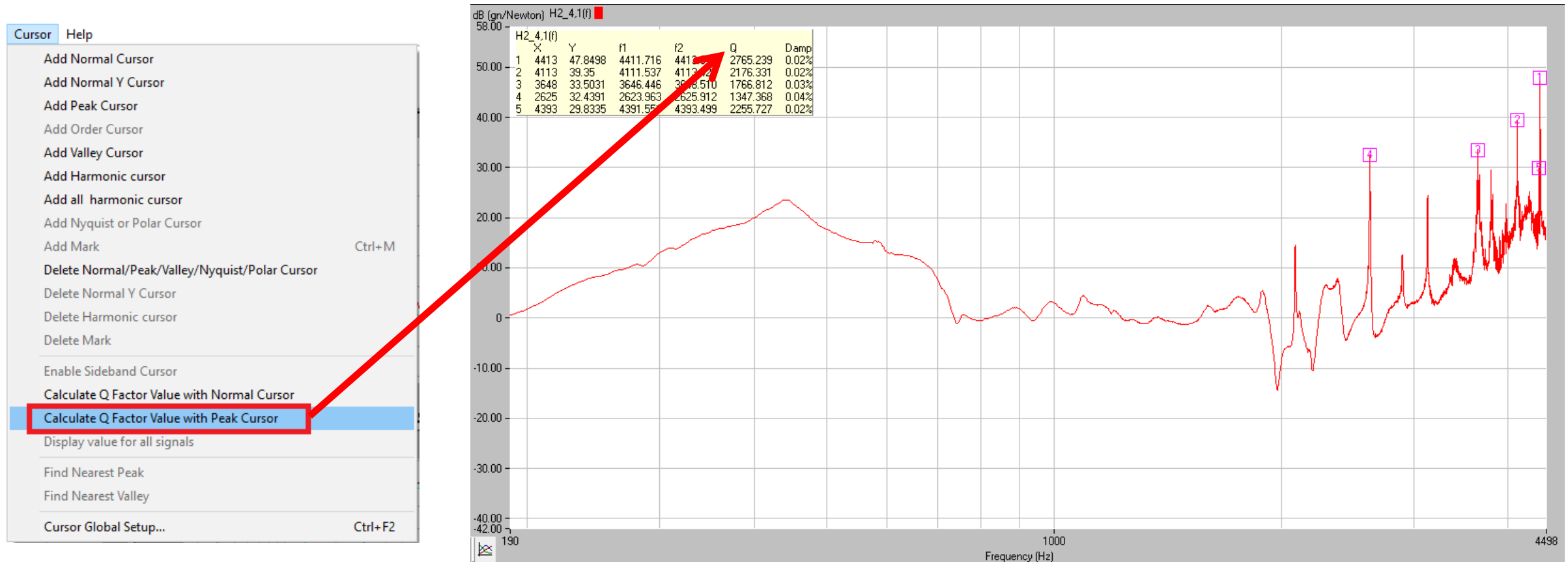
# Cursors: Normal Cursor and Cursor Mark enhancements

- Normal Cursor "Overall RMS" calculation and readout for Statistical Signals



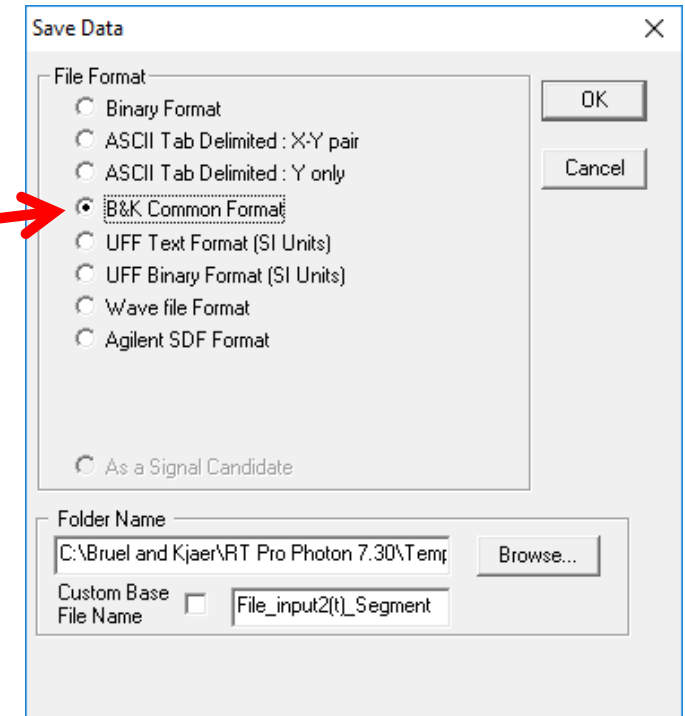
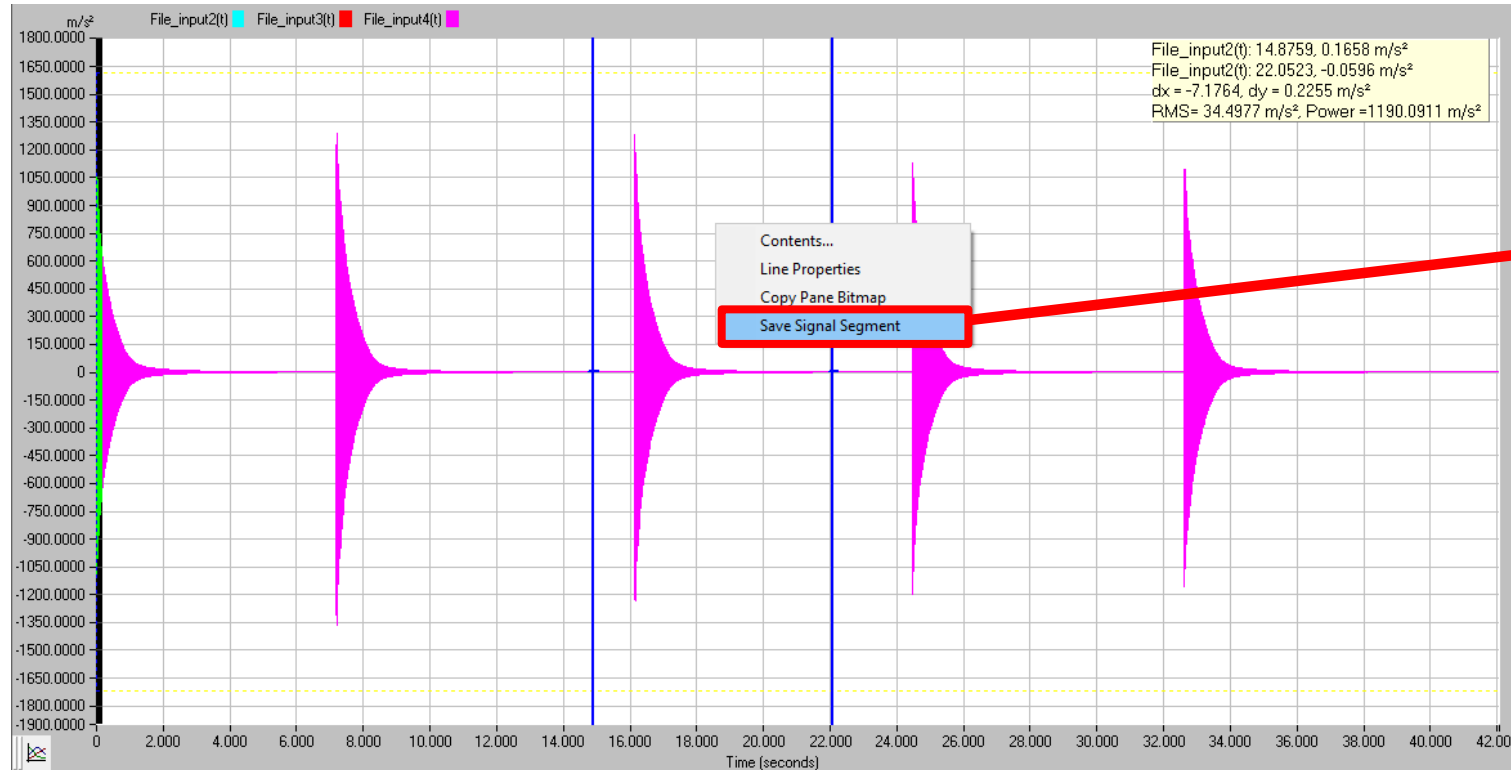
# Cursors: Peak Cursor enhancement

- Peak Cursor Q-Factor and Damping calculations and readout table for frequency domain signals



# Playback: Save Signal Segment as B&K Common Format (.BKC)

- Bruel & Kjaer Common Format (.BKC) now supported by Save Signal Segment



# Playback: Import general ASCII (.TXT) waveform data

- General, non-RT Pro generated ASCII (.TXT) files can now be imported by Playback
  - .CSV files are also now supported

The screenshot illustrates the workflow for importing an ASCII file into the software. It consists of four main components:

- Notepad:** A text editor window titled "Cylinder Head Vibration 1.48 grms.txt" containing the following data:

```
5 0.067920464
10 0.067389481
15 0.032533649
20 0.003703363
25 0.009002967
30 0.002056141
35 0.002400965
40 0.0023
45 0.00081
50 0.000208802
55 0.000268869
60 0.002245062
65 0.000335396
70 0.000988248
75 0.000724803
80 0.000046575
85 0.000052428
90 0.000082198
95 0.000059846
100 0.000072653
105 0.000050121
```
- Channel Parameter Settings:** A dialog box with a "Playback Signal Selection" tab. It features a "Browse" button and a table for selecting signals. The table has columns for Channel, Import File, Name, Quantity, EU, and mv/EU. The first row is selected, showing "Cylinder Head Vibration 1.48 grms.txt" in the Name column.
- Import File Data Parameters:** A dialog box for configuring the import. It includes fields for File Name, File Format (set to "ASCII Delimited Format(X-Y Pair)"), Signal Name, Delta T (s) (set to 5), Data Points (set to 100), Response Dimension (set to Acceleration), and Value Unit (set to gn). A preview window shows the first few lines of the file's content.
- File View:** A window titled "Untitled8: File View" displaying a waveform plot. The y-axis is labeled "gn" and ranges from -0.0069 to 0.0775. The x-axis is labeled "Time (seconds)" and ranges from 0 to 495.00. The plot shows a sharp initial peak followed by a series of smaller, irregular oscillations.

Red arrows indicate the flow of information: from the Notepad file to the Channel Parameter Settings dialog, from the dialog to the Import File Data Parameters dialog, and from the dialog to the File View plot.