Release Overview

Smaart v9.2
September 6, 2023

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9.2 Features & Updates

New Features
- New Data Library Search and Sorting functions
- New Data Archiving Function
- New Advanced Plot Type – L-IFFT *
- Added option to change/set the generator level increment precision and allow .5dB increments
- Trace Info enhancements – control data set visibility

Under The Hood
- New graphics rendering engine in SPL Mode**
- New graphics rendering engine in Advanced Delay Finder
- Optimization to improve performance with large data libraries
- Added magnitude thresholding to the Find Delay calculation
- Averaging type is now forced to Complex only when the FTW checkbox in the Control Bar is checked*
- When a folder of data is imported, subdirectories are now also imported.

GUI Enhancements
- Output presets can now be changed while Generator is ON
- "Delete" hotkey is now supported in Measurement Config flyout
- Added "Alt + J" hotkey to open advanced preferences*
- Standalone SPL Meters now have a smaller minimum size**
- Added "Make Session Folder" option to the right-click menu for folders in the Data Library

Bug Fixes
- Fixed a bug where captured TF traces did not use the correct Smoothing value.

* Smaart v9 Suite and RT only
** Smaart v9 Suite and SPL only

Data Library Search, Sort & Archive

The Smaart v9.2 Data Bar has been enhanced to include a searchable data storage area with various sorting capabilities. Additionally a new "Data Archive", or secondary data folder for each data type (Transfer Function .trf, Spectrum .srf, SPL log .txt, and Impulse Response .wav), can be accessed directly from top of the data bar.

Search

Simply begin typing in the search bar to automatically filter the data library based on your text entry. To remove the sorting filter, simply delete what you searched for, or select the X icon to the right of the text.

Sort

Common sorting options have been added to the Data Bar Menu. To access these functions, navigate to the *Data Bar Menu (hamburger menu) > Sort By* and choose a sorting type. Data can be sorted by:

- *None (Default)*
- *Newest to Oldest*
- *Oldest to Newest*
- *A to Z*
- *Z to A*
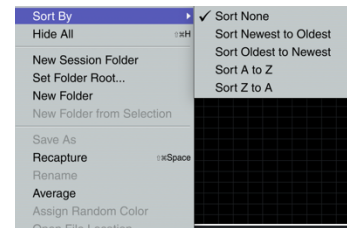
Data Archive

Smaart v9.2 adds a dedicated data archive in the Smaart documents folder. You can swap between the active data folder and this secondary folder, named "Archived Data". This is intended to allow you to move data that you don't regularly recall to a separate folder, rather than continually filling Smaarts data folder with data that you may not intend to revisit – but you aren't ready to delete. This is not just a good housekeeping practice, but also yet another way to improve Smaart's performance with large data libraries. This feature must be turned on by navigating to the data bar hamburger menu and selecting *Show Archive.*
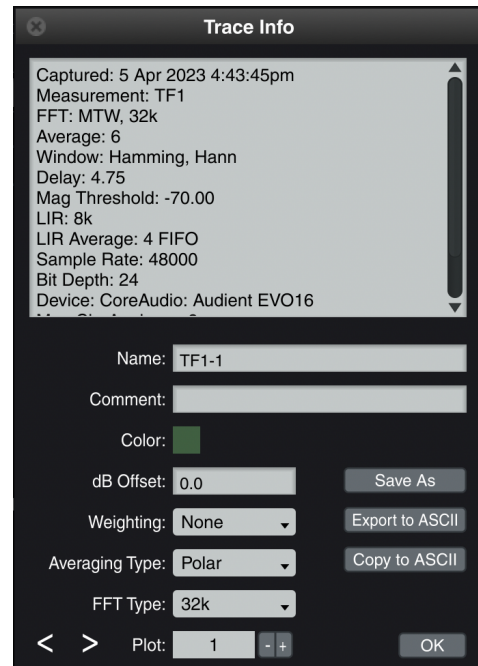
To move saved data to the archive, right select the data in the data bar then choose *Archive Selected*. The trace will be moved directly to the Archive folder. If a folder is selected, the entire folder and its contents will move. Selecting the new folder icon with two arrows circling around it (see the figure to the right) will swap out the entire data root directory with the archive folder. From the archive folder, you can return archived folders and traces to the main data folder by right selecting them and choosing *Restore Selected.*
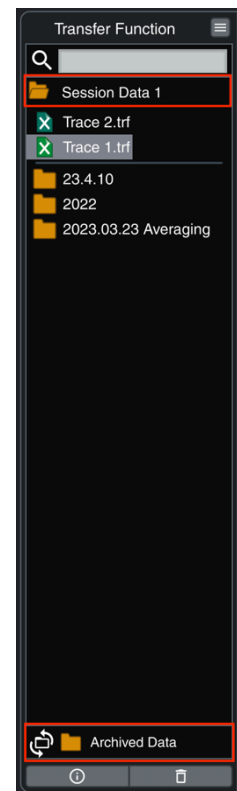
Trace Info Enhancements

Several new controls have been added to the Trace Info dialog, including the ability to:

- Select which magnitude average type is displayed (choose between complex and polar, for all data created in 9.1+).
- Select which FFT type is displayed, MTW or single time record (whichever single FFT was calculated at the time of capture – 32k is the default).
- The ability to scroll between the trace info of stored traces in the same folder via the < and > buttons in the lower left of the Trace Info dialog.

Trace Info

Captured: 5 Apr 2023 4:43:45pm
Measurement: TF1
FFT: MTW, 32k
Average: 6
Window: Hamming, Hann
Delay: 4.75
Mag Threshold: -70.00
LIR: 8k
LIR Average: 4 FIFO
Sample Rate: 48000
Bit Depth: 24
Device: CoreAudio: Audient EVO16

Name: TF1-1
Comment:
Color:
dB Offset: 0.0   Save As
Weighting: None   Export to ASCII
Averaging Type: Polar   Copy to ASCII
FFT Type: 32k
< >   Plot: 1 - +   OK

L-IFFT

The Live Inverse Fourier Transform (L-IFFT) is an alternate view of the Live IR plot that uses the single time record FFT calculated with every transfer function measurement in v9 to plot an absolute time referenced live impulse response with the benefits of a real time transfer function measurement applied to it - specifically averaging and magnitude thresholding.
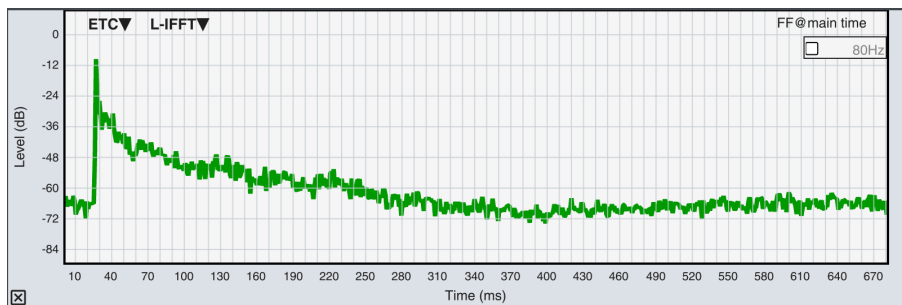
Each TF measurement in Smaart v9 is simultaneously calculating an MTW, 32k FFT (by default, other sizes are selectable), and the polar and complex magnitude averaging of each. L-IFFT takes the single time record complex FFT data and applies an IFFT to get the L-IFFT view. Older, v8 data, can also be displayed in the L-IFFT plot only if it was calculated using a single FFT (no MTW data).

If the measurement at the top of the z-order only has MTW data available, the L-IFFT selection is disabled, and nothing will appear in the plot.

Accessing L-IFFT

L-IFFT is available in Smaart Suite, and RT only. It is accessed by choosing "L-IFFT" in *Preferences>Advanced>Transfer Function Settings.* Once enabled, a secondary drop down in the Live IR graph allows you to select between *Live IR* and *L-IFFT*. Both views offer the standard Lin/Log/ETC graph types.

Bandpass Filter

The same octave bandpass filter used in the Advanced Delay Finder can be applied to the L-IFFT data using the in-plot widget to both enter the desired filter center frequency and then toggle it on/off via the checkbox.

Generator Level Increment Precision Update

Smaart v9.2 introduces the option to change the signal generator level increment precision, allowing 1dB (default) and .5dB increments.
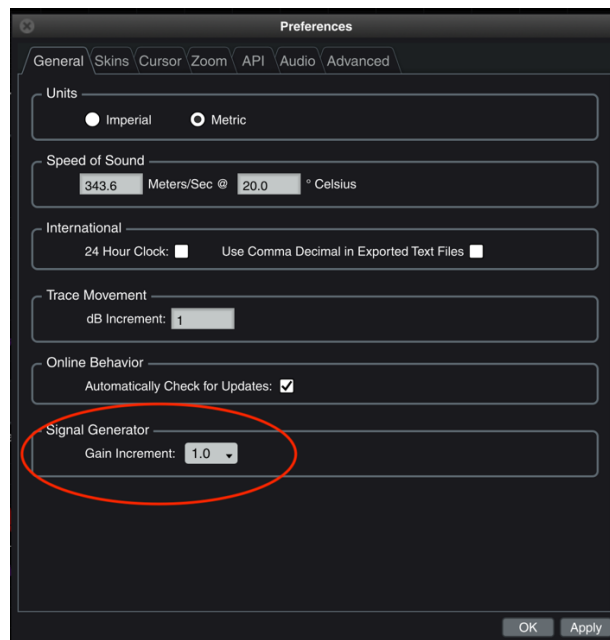
Accessible via Options > Preferences > General in the *Signal Generator* category, the *Gain Increment* dropdown will adjust the precision at which the signal generator can be adjusted. When set to 1.0 dB, whole numbers are used to set signal level and the signal generator + and – buttons will change the level in 1dB increments. When set to .5 dB, each decibel of change will have two steps, and the + and – buttons adjust the level in .5 dB increments.