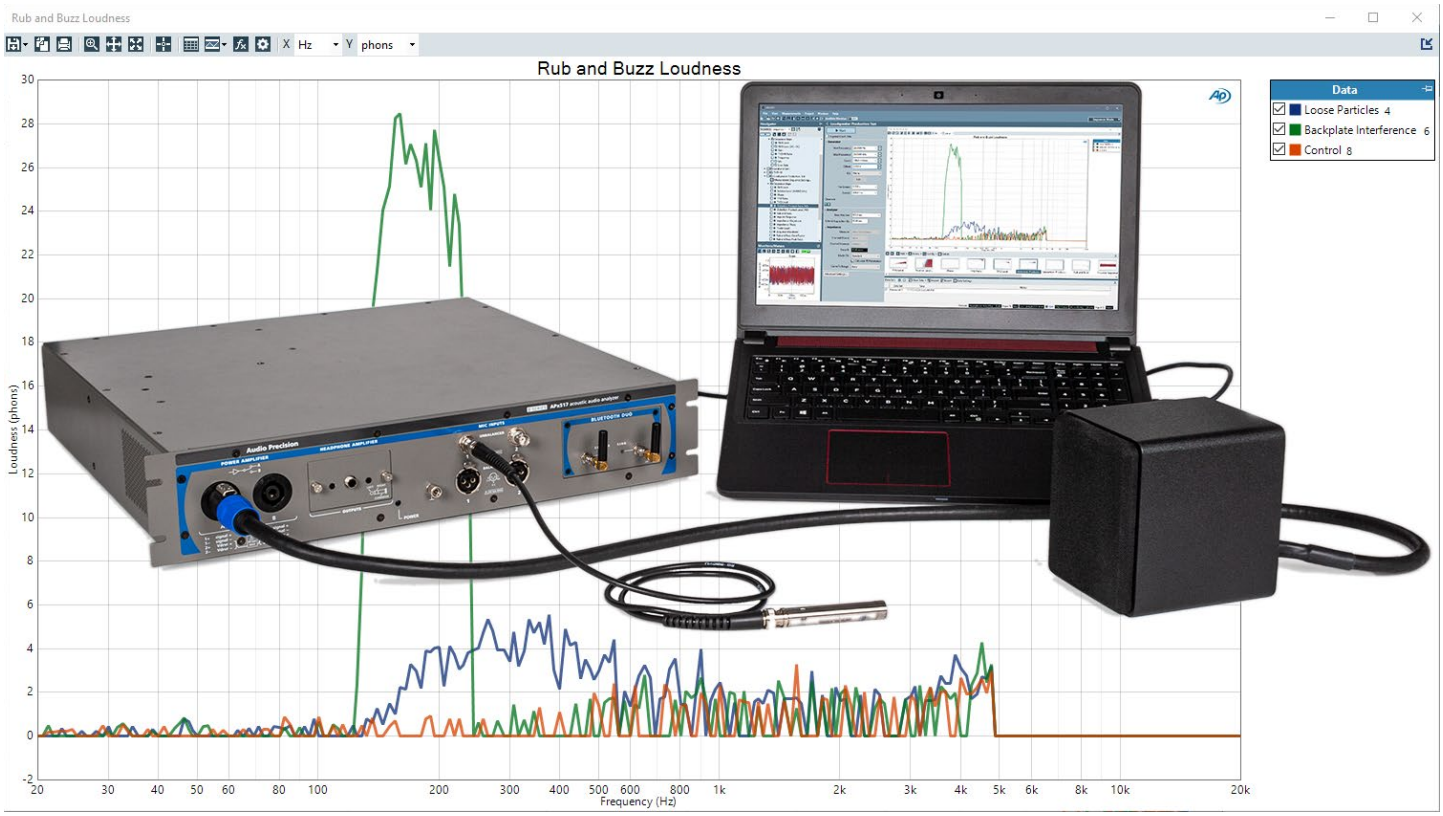

Rub and Buzz Loudness result in APx500 version 6.1.0 using the APx517B analyzer

What's New: APx500 version 6.1.0 June 2021

This document looks at the new and improved features in the latest release of the APx500 software for all models of APx Series audio analyzers.

For more information, please contact your local Audio Precision sales partner, or visit the AP website at ap.com for datasheets, technical content, and software downloads.

Introduction to APx500 version 6.1.0

APx500 6.1.0 is a release update that adds several new features to the software, including a new Fast Sweep stimulus for Loudspeaker Production Test measurements, additional Rub and Buzz results, enhancements to distortion ratio results, any results containing waveform data can now be exported to WAV files, and other improvements. This latest release of APx500 software continues to raise the bar by providing the broadest set of rub and buzz defect detection methodologies available to support designers and manufacturers of speaker drivers and finished products that incorporate such drivers (e.g., speakers, headphones, headsets, smart speakers, etc.).

Fast Sweep in Loudspeaker Production Test

Fast Sweep is new sine wave stimulus signal that utilizes transient-minimized steps as the sweep is moved across a range of frequencies in a specified number of points. A Fast Sweep stimulus enables measurement speeds comparable to a continuous sweep with many of the benefits of a stepped sweep stimulus, including:

- Avoiding artifacts at high and low frequencies exhibited by log chirps due to FFT windowing
- Ability to sweep from high to low frequencies
- Precise control of the number of discrete points used in measurements
- Identifying high order harmonics necessary for obtaining HOHD (High Order Harmonic Distortion) results
- ISO-R Series sweeps options

New Results For Rub and Buzz and Harmonic Distortion Measurements

Additional Rub and Buzz results expand the options available when testing electro-acoustic devices, providing the broadest and most robust solutions for the identification of rub and buzz defects in development and production-test environments. Whichever defect detection methodology you prefer, APx500 has a solution. Rub and buzz and harmonic distortion results available in the APx Loudspeaker Production Test (LPT) measurement include the following new additions:

- Rub and Buzz Loudness
- SoneTrac Residual Waveform
- SoneTrac Rub and Buzz
- Reference Waveform
- HOHD (High Order Harmonic Distortion)
- Level and Distortion (New for LPT)

The following new Rub and Buzz results are also available in the Acoustic Response measurement:

- SoneTrac Residual Waveform
- SoneTrac Rub and Buzz

Selectable IEC & IEEE THD Calculation Methodologies

You can now switch instantly between IEC and IEEE THD calculation modes for harmonic distortion results using the drop-down menu selection in the Results Settings bar. IEC and IEEE calculation modes are available for THD Ratio, Distortion Product Ratio and HOHD (High Order Harmonic Distortion) results in Loudspeaker Production Test, Continuous Sweep, and Acoustic Response measurements.

Normalization of Harmonic Distortion Ratio Results

Normalization addresses some common distortion effects that can occur when testing loudspeakers, including the decrease of speaker output levels at lower frequencies and the effects on the fundamental response by harmonics and environmental conditions. These issues can cause an apparent increase in harmonic distortion. Normalization addresses these issues to provide a more accurate view of the distortion defects in a measured response. The normalization checkbox is available in THD Ratio, Distortion Product Ratio and HOHD (High Order Harmonic Distortion) results in the Loudspeaker Production Test, Continuous Sweep, and Acoustic Response measurements.

WAV File Export From Acquired Signal Result Data

Result data saved as WAV files can be useful for later analysis and playback. APx500 WAV file export capabilities are now available from any result containing waveform data, including Acquired Waveforms, Reference Waveforms, and Impulse Response results. Data can be saved to WAV files from the graph toolbar, graph context menu, data grid windows and the export button on the Data Sets toolbar. Additionally, sequence steps can be added in the Navigator to export data to WAV files when running in Sequence Mode.

Specify Data Points Derived Result Availability

The Specify Data Points derived result enables the selection of specific points of interest from a dense set of measurement result data. Results are displayed on the derived result graph with the Y-axis data interpolated at the selected X-axis values. Previously only available for a limited number of results, Specify Data Points can now be attached to any XY graph where the measurement result has X-axis units of frequency (Hz) or time (seconds).