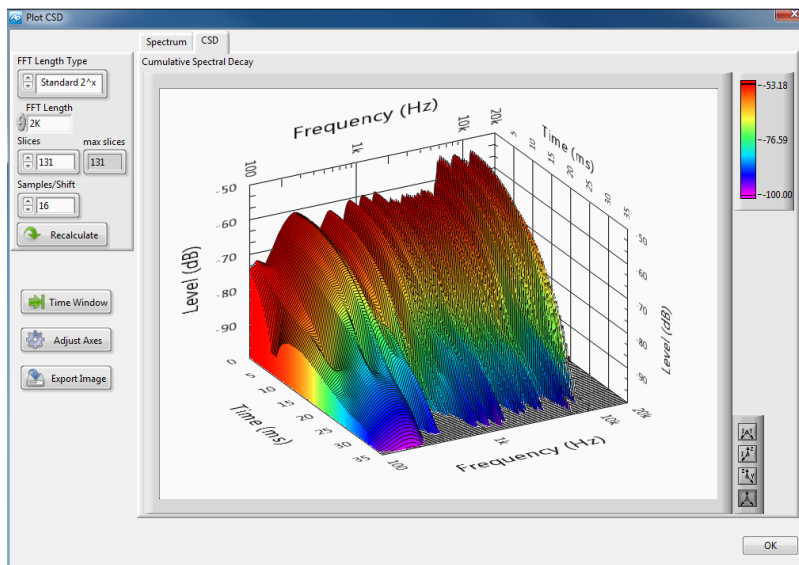




# Electro-Acoustic software options for APx500

Loudspeaker and acoustic test for APx audio analyzers



Waterfall (Cumulative Spectral Decay) plot

## KEY FEATURES

- Impedance/Thiele-Small characterization
- One-second Loudspeaker Production Test
- Rub & Buzz detection
- Waterfall and Polar plots
- Air Leak detection
- Loudspeaker impedance fixture available
- Incorporate into any APx project or report
- Compatible with APx515, 525, and 585 analyzer families

## Electro-Acoustic Test, AP Performance

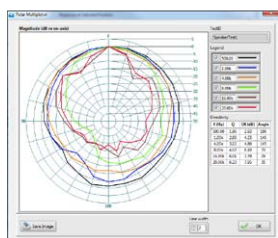
The Electro-Acoustic test suite software options for APx analyzers form a comprehensive solution, allowing designers and production engineers to test electro-acoustic products end-to-end, from low-noise analog to digital processing through to loudspeaker output performance. Measurements, results, reports and automation can be easily shared among APx analyzer models, allowing designers and production engineers to collaborate and ensure quality, even when separated by great distances.

## R&D

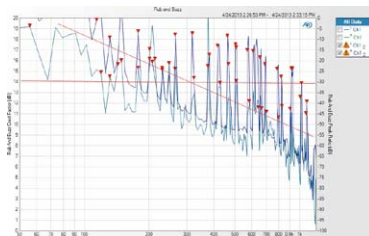
The SPK-RD option delivers a complete suite of measurements and results tailored to the needs of designers and engineers developing electro-acoustic audio products. It includes key measurements and results such as complete Thiele-Small characterization, time-gated quasi-anechoic Acoustic Response, Impedance analysis and the Loudspeaker Production Test measurements.

## Production

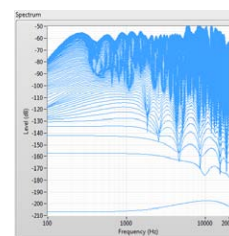
The SPK-PT option provides high speed electro-acoustic tests for the production of electro-acoustic devices. With a one-second sweep, the APx Loudspeaker Production Test compares optimized Thiele-Small parameters against “Golden Unit” results to ensure driver and enclosure integrity, and simultaneously checks for Rub & Buzz defects, Polarity, Relative Level, Phase, Distortion Product Ratio, and Distortion Product Level.



Polar plot



Rub & Buzz results



CSD plot



## APx Impedance/Thiele-Small Characterization

The APx Impedance/Thiele-Small measurement captures the complex impedance of a loudspeaker under test and delivers calculated electromechanical parameters that define the low frequency performance of loudspeaker drivers, vital to both design and production test.

APx Thiele/Small supports the Known Moving Mass, Known Volume and Added Mass methods.

## APx Rub & Buzz Test

APx Rub & Buzz employs a chirp stimulus with crest factor and peak ratio analysis to quickly identify mechanical defects such as misaligned voice coils, particles in the voice coil gap, and incomplete adhesion of suspension elements to a frame.

## APx Waterfall and Polar Plots

APx Waterfall Plot creates three-dimensional graphs that display multiple curves of data that can represent changes over time or frequency. Spectrum or Cumulative Spectral Decay (CSD) views are available.

APx Polar Plot displays the response of loudspeakers and microphones relative to position in a plane, and supports popular turntables to produce full circle, semi-circle, quarter-circle and custom plots.

## APx Perceptual Audio Test

APx POLQA and PESQ measurements test voice quality on mobile phones, VoIP networks and hands-free devices. Tests return MOS (Mean Opinion Score) values with a high correlation to results obtainable using human subjects.

## Acoustic Test Accessories

AP offers accessories and fixtures that extend the capabilities of APx audio analyzers, and is an authorized reseller of products from G.R.A.S. Sound and Vibration of Denmark.

	SPK-RD	SPK-PT
<b>Impedance/Thiele-Small</b>	●	
Full Thiele-Small Parameters	•	
Impedance Real	•	
Impedance Imaginary	•	
Impedance Magnitude	•	
Impedance Phase	•	
<b>Loudspeaker Production Test</b>	●	●
Optimized Thiele-Small Parameters	•	•
Rub & Buzz Detection	•	•
Impedance Magnitude	•	•
Impedance Phase	•	•
Impulse Response (Polarity)	•	•
Frequency Response	•	•
Relative Level	•	•
Phase	•	•
Distortion Product Ratio	•	•
Distortion Product Level	•	•
<b>Acoustic Response</b>	●	
Rub & Buzz Detection	•	
Impulse Response	•	
Energy Time Curve	•	
Frequency Response	•	
Relative Level	•	
Phase	•	
Distortion Product Ratio	•	
Distortion Product Level	•	
<b>Modulated Noise Air Leak Detection</b>	●	●

<b>APX-SW-POLQA2</b>	POLQA for APx. Next-generation voice quality test with support for wide band speech and acoustical interfaces
<b>APX-SW-PESQ</b>	PESQ for APx. Speech analysis for standard networks & codecs

<b>Impedance Fixture IMP1</b>	Connect loudspeakers in multiple configurations 0.1Ω and 1.0Ω sense resistors
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APx515



APx525



APx585