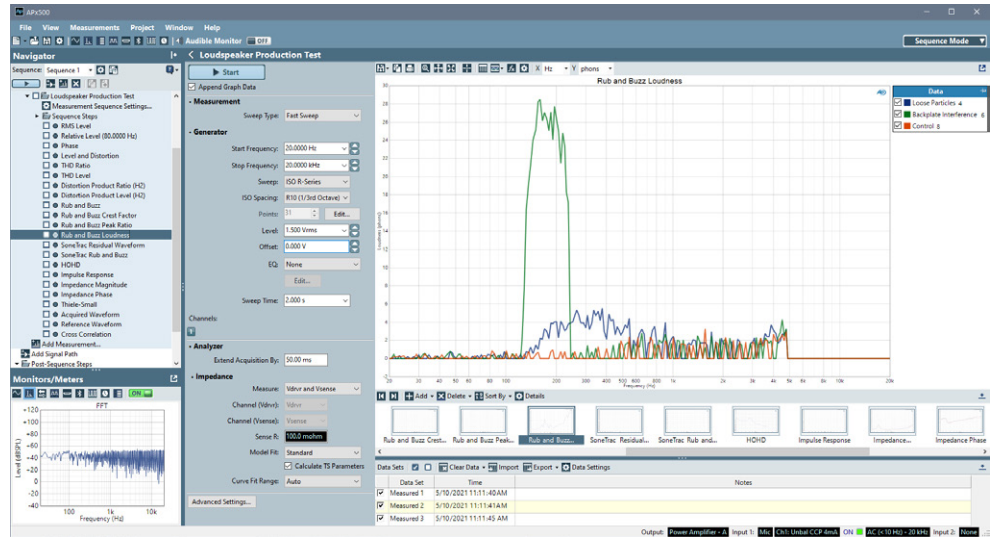




Electro-Acoustic software options for APx500

Loudspeaker and acoustic test for APx audio analyzers



Rub and Buzz Loudness Results

KEY FEATURES

- ◆ Impedance/Thiele-Small characterization
- ◆ One-second Loudspeaker Production Test
- ◆ Broadest set of methodologies for detecting rub & buzz defects
- ◆ Waterfall and Polar plots
- ◆ Air Leak detection
- ◆ Loudspeaker impedance fixture available
- ◆ Incorporate into any APx project or report
- ◆ Compatible with APx515, 517, 525, and 585 analyzer families

Electro-Acoustic Test, AP Performance

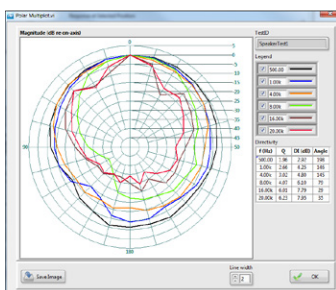
The Electro-Acoustic test suite software options for APx analyzers form a comprehensive solution and includes the broadest set of methodologies available for rub & buzz defect detection. The available options allow designers and production engineers to test electro-acoustic products end-to-end, from 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

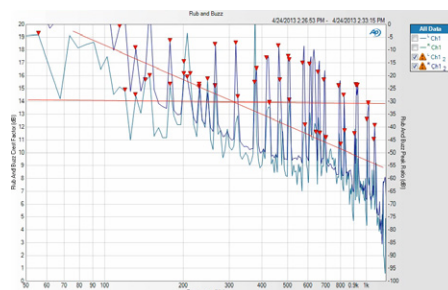
The SPK-RD option delivers a complete suite of measurements and results tailored to the needs of designers and engineers developing electro-acoustic audio products. It includes key measurements and results such as complete Thiele-Small characterization, time-gated quasi-anechoic Acoustic Response, Impedance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

Production

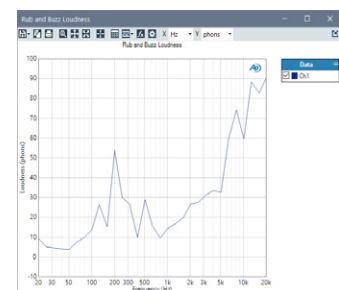
The SPK-PT option provides high speed electro-acoustic tests for the production of electro-acoustic devices. With a one-second sweep, the APx Loudspeaker Production Test compares optimized Thiele-Small parameters against “Golden Unit” results to ensure driver and enclosure integrity, and simultaneously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



Polar Plot



CSD Plot



Rub & Buzz Loudness Results

APx Impedance/Thiele-Small Characterization

The APx500 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 Options

APx500 Rub & Buzz measurement results include legacy Rub & Buzz (Crest Factor and Peak Ratio), SoneTrac Rub & Buzz, Rub & Buzz Loudness and High Order Harmonic Distortion (HOHD). Together, these provide the broadest set of methodologies available 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 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, including the APx1701 Transducer Test Interface, and GRAS measurement microphones.

| | SPK-RD | SPK-PT |
|---|--------|--------|
| Impedance/Thiele-Small | ○ | |
| Full Thiele-Small Parameters | • | |
| Impedance Real | • | |
| Impedance Imaginary | • | |
| Impedance Magnitude | • | |
| Impedance Phase | • | |
| Loudspeaker Production Test (LPT) and Acoustic Response (AR) | ○ | ○ |
| Optimized Thiele-Small Parameters (LPT) | • | • |
| Impedance Magnitude (LPT) | • | • |
| Impedance Phase (LPT) | • | • |
| Rub & Buzz Loudness (LPT) | • | • |
| Rub & Buzz (LPT and AR) | • | • |
| SoneTrac Rub & Buzz (LPT and AR) | • | • |
| HOHD (LPT) | • | • |
| Impedance Magnitude (LPT) | • | • |
| Level and Distortion (LPT and AR) | • | • |
| Impulse Response (LPT and AR) | • | • |
| Frequency Response (LPT and AR) | • | • |
| Relative Level (LPT and AR) | • | • |
| Phase (LPT and AR) | • | • |
| Distortion Product Ratio (LPT and AR) | • | • |
| Distortion Product Level (LPT and AR) | • | • |
| Modulated Noise Air Leak Detection | ○ | ○ |

| | |
|--|--|
| APX-SW-POLQA2 | POLQA for APx. Next-generation voice quality test with support for wide band speech and acoustical interfaces. |
| Impedance Fixture IMP1 | Connect loudspeakers in multiple configurations 0.1Ω and 1.0Ω sense resistors. |
| APx1701 Transducer Test Interface | Power amplifiers, microphone conditioning and impedance fixture under APx software control. |
| Audio Precision Measurement Microphones | A family of precision microphones and accessories for acoustic test and measurement. |



APx515



APx517

