



APx555 B Series | Audio Analyzer

High-performance, modular 2-channel audio analyzer



KEY FEATURES

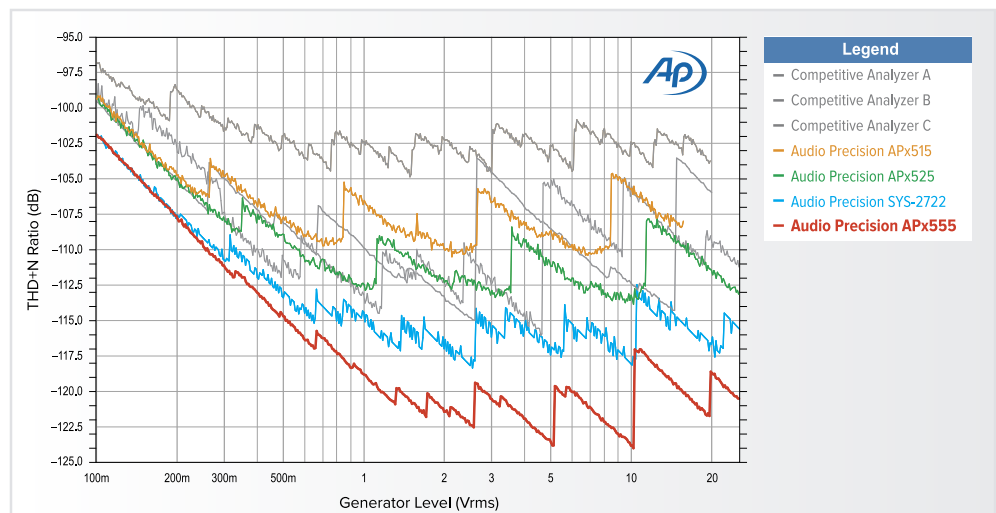
- Industry-best analog performance
- Residual THD+N: -120 dB (typical)
- Over 1 MHz bandwidth @ 24 bits on two channels
- Signal generation up to 204 kHz and 26 Vrms
- 1.2 M point FFTs
- ADC Test Mode option
- Support for the complete range of APx digital I/O options, including 32-bit digital serial I/O at up to 432 kHz sample rate
- Transfer Function Measurement
- Open-Loop Chirp Measurement
- Support for jitter capable digital interface options
- Advanced Master Clock for Reference, Sync and Trigger
- Independent output channel configuration

The New Standard – the highest performance and most versatile audio analyzer ever made.

A culmination of 30 years' experience making test equipment recognized as the standard of the audio industry, the B Series APx555 is an analyzer without compromise. It combines the best analog performance we have ever delivered with complete support for all APx digital I/O options and fast, intuitive measurement software. With the introduction of the B Series, the APx555 further lowers analog system residual distortion at sinewave frequencies above 50 kHz over the full 1 MHz bandwidth.

Unprecedented Performance

With a typical residual THD+N of -120 dB and over 1 MHz bandwidth, the APx555 B series surpasses the analog performance of all other audio analyzers. This performance is supported by 1.2 million point FFT resolution.



The chart above shows the residual THD+N of several current audio analyzers as a function of generator level; lower values are better. The red trace at the bottom is the APx555; the blue trace above that is the SYS-2722, and the green trace is the APx525.



Multi-mode UI

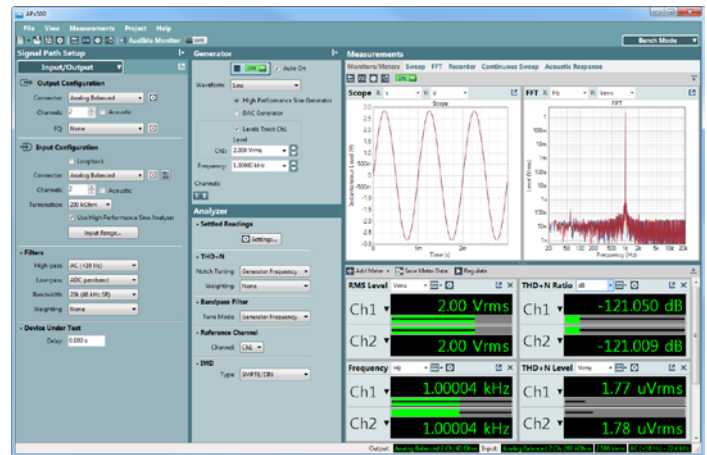
APx500 measurement software allows the B Series APx555 to adapt to the needs and preferences of audio designers, engineers and technicians.

Sequence Mode provides complete, code-free automation of pre-defined measurement sequences to enable fast and reliable results.

Bench Mode provides a real-time interface, with waveforms, FFTs and meters for virtually any parameter enabling the identification of important device interactions.

ADC Test Mode Option

The ADC Test Mode option provides an adjustable common mode V_{Bias} DC offset voltage on the balanced analog outputs. A Pin Voltage Protection mode, when enabled, prevents overvoltage damage to your direct-coupled ADC device's input during performance tests.



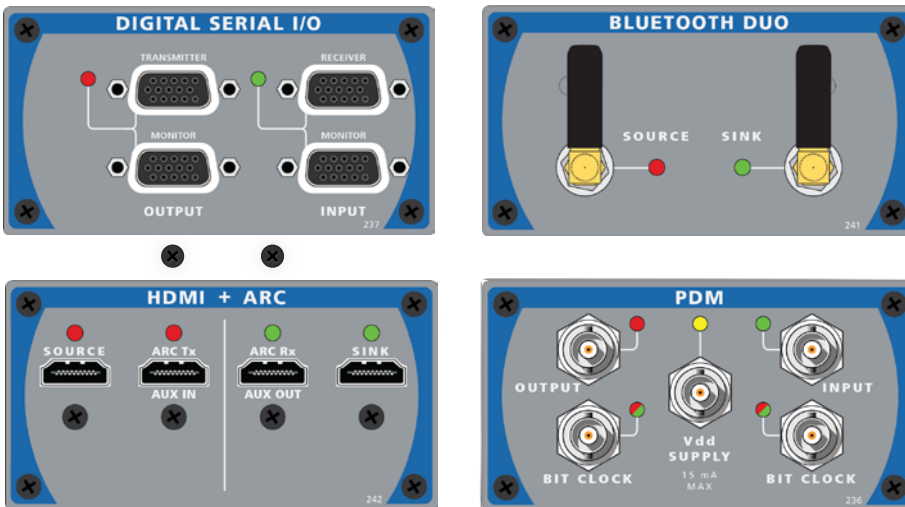
APx500 Bench Mode, showing live meters and monitors for waveforms, FFT, RMS levels, frequency and THD+N.

Unmatched Flexibility

The APx555 supports the complete range of APx digital I/O options, ensuring compatibility with a wide array of audio formats and devices.

- Digital Serial – I²S, TDM, multi-line support (including jitter*)
- *Bluetooth*[®] – supports A2DP, AVRCP, HFP and HSP profiles
- HDMI+ARC – source, sink & monitor (including metadata)
- PDM – one-bit audio generation & analysis (including PSRR and jitter*)
- Advanced Digital – AES/SPDIF/Optical (including jitter*)

**Advance Master Clock is standard on the APx555, and supports all jitter capable digital interface modules.*



The B Series APx platform incorporates a modular architecture enabling configuration for a variety of digital I/O options.

KEY SPECIFICATIONS

SYSTEM PERFORMANCE

Residual THD+N (22 kHz BW)
-117 dB +1.0 μ V
Typically < -120 dB (1 kHz, 2.0 V)

GENERATOR PERFORMANCE

Sine Frequency Range
0.001 Hz - 80 kHz, DAC
5 Hz - 204 kHz, Analog
Frequency Accuracy
3 ppm, DAC
30 ppm, Analog (Precision Tune)
IMD Test Signals
SMPTE & MOD, DFD, DIM
Maximum Amplitude
26.66 Vrms bal, 13.33 Vrms unbal
(10 Hz to 100 kHz)

Amplitude Accuracy (1 kHz)
 ± 0.03 dB (+15° C to +30° C)
Flatness (5 Hz - 20 kHz)
 ± 0.008 dB
Analog Output Configurations
Unbalanced, balanced (differential or single-ended) or CMTST
Digital Output Sampling Rate
27 kS/s to 200 kS/s*
ADC Test V_{Bias} Range
-0.4 to +4.2 VDC

ANALYZER PERFORMANCE

Maximum Rated Input Voltage
300 Vrms (bal)
160 Vrms (unbal)

Maximum Bandwidth
> 1 MHz
IMD Measurement Capability
SMPTE & MOD, DFD, DIM
Amplitude Accuracy (1 kHz)
 ± 0.03 dB (+15° C to +30° C)
Amplitude Flatness (10 Hz - 20 kHz)
 ± 0.008 dB
Residual Input Noise (22 kHz BW)
 ≤ 1.0 μ Vrms
Individual Harmonic Analyzer
H2-H10
Maximum FFT Length
1248K points
DC Voltage Measurement
Yes

**Optical 27 kS/s to 108 kS/s*



Accredited by A2LA
under ISO/IEC: 17025
for equipment calibration

APx555 B Series Software Options

APx500 software options provide measurements and functionality beyond the core set of capabilities standard for the APx555 B Series analyzers. A variety of options are available for electro-acoustic and perceptual audio test needs.

Software maintenance options are available to extend the standard year of coverage that comes with a new APx analyzer. APx Legacy analyzers can be upgraded to the current software version and then software maintenance options added. Software maintenance options entitle the user to receive the next major software release, and can be extended for multiple years.



ELECTRO-ACOUSTIC MEASUREMENTS

Part No.	Description	Measurements/Features
APX-SW-SPK-PT	Loudspeaker Test: Production	Combines an acoustic measurement (Frequency Response, Phase, Distortion and Rub & Buzz) and an electromechanical impedance measurement (Impedance Response Curves plus a subset of Thiele-Small). Also includes Acoustic Response (APx v4.0 or later) and Modulated Noise.
APX-SW-SPK-RD	Loudspeaker Test: R&D	Acoustic Response (with Rub & Buzz), Impedance / Thiele-Small, Modulated Noise. Includes all measurements in APX-SW-SPK-PT plus the APx Polar Plot and APx Waterfall Graph utilities.

PERCEPTUAL AUDIO

APX-SW-STI	Speech Transmission Index	Plug-in for conducting Speech Transmission Index (STI) measurements using the STIPA method.
APX-SW-PESQ	PESQ	Widely-used, enhanced perceptual measurement for voice quality on low-bandwidth devices.
APX-SW-POLQA2	POLQA	Successor to PESQ with support for HD Voice, 3G, 4G/LTE and VoIP technologies. (2 channels)
APX-SW-ABC-MRT	ABC-MRT	Provides an objective measure of speech intelligibility following the paradigm of the Modified Speech Ryme Test.

ADC TEST

SW-555ADCTEST	ADC Test Mode	Adds the capability to generate balanced analog audio signals mixed with a calibrated common mode DC offset voltage and programmable voltage limits.
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SOFTWARE MAINTENANCE

Part No.	Description	Maintenance Features
SW-MAINT-1/3/5	Software Maintenance	Provides 1,3, or 5 years of software maintenance for an existing APx Legacy or B Series audio analyzer.
SW-EXT-3/5	Software Maintenance	Provides 2 or 4 additional years of software maintenance with the purchase of a new B Series APx analyzer.
SW-UPG-APX5	Software Upgrade	Software upgrade to APx Version 5 for Legacy APx analyzers.

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