APx525 Family Audio Analyzers

Audio test & measurement for modern audio devices

APx525 2 channel analyzer with Digital Serial I/O option

Key Features

- 2 or 4 independent channels
- Typical THD+N –110 dB
- 24-bit, 1M point, 1 MHz FFT
- One-click measurements, graphical limits, advanced configuration options.
- Multichannel, multiple format chip-level connectivity
- Automated sequences or VB.NET, C#.NET, LabVIEW.
- Share projects and .wav aquisition files with any APx
- Create custom reports using MS Word.

The APx525 family combines an award-winning user interface with AP's legendary commitment to performance. APx is high speed, high performance, and user friendly. Innovations include one-click measurements, the automated measurement sequencer and continuous sweep technology that can derive 14 measurements in as few as 7 seconds.

Across all measurements, the interface is extremely intuitive with multiple views of results and graphic pass/fail limits. Repetitive bench tests can be automated with the measurement sequencer or through the API; level, scope, and FFT signal monitors can be pulled up for real-time analysis. APx supports multiple signal paths and can play custom waveforms or measure playback-only devices such as CD, DVD and MP3 players using external source mode.

Ultra-high bandwidth, unique measurements & very low noise

APx525 has exceptional performance. With the **AG52** and **BW52** options, typical THD+N is –110 dB and the 24-bit, one million point FFT can go from DC to beyond 1 MHz.

APx525 displays power spectrum graphs with regulated frequency sweep and other CEA-2006/CEA-490A measurements. It is also the only audio analyzer in the world to enable CMRR measurements in accordance with IEC60268 section 14.15.1.

The **APx521** and **APx526** four channel models are ideal for testing automotive audio systems (a free utility generates FM MPX RDS-encoded tones for APx). APx's built-in acoustic response measurements make setting up pseudo-anechoic measurements very simple. The **Digital Serial I/O** option provides an I²S interface to multichannel converters, CODECs, and DSPs.

APx526 4 channel analyzer

Models & Options

Select the analyzer that matches your needs. All models use the same software, so sharing projects is easy. Modular hardware allows for future upgrades.

Starting under $10,000 in the US

APx520	2 channel analog only
APx521	4 channel analog only
APx525	2 channel analog + 192K digital I/O
APx526	4 channel analog + 192K digital I/O

AVAILABLE OPTIONS

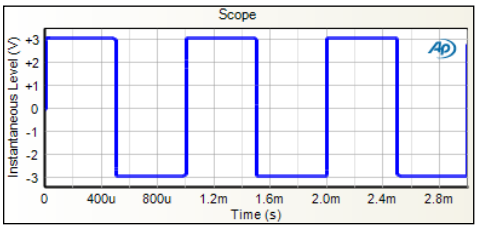
DSIO	Adds digital serial interface for chip-level analysis
AG52	Adds square waves & reduces THD+N by 2 dB
BW52	Adds 24-bit, 1 MHz bandwidth analysis

AG52 Analog Generator option

The AG52 generator option generates exceptionally clean square waves with a rise time better than 2 microseconds. The AG52 can also generate all of the popular DIM test signals to complement the corresponding DIM distortion measurement capability in the software — highly desirable for power amp test and measurement.

Using special circuit techniques, the AG52 does not suffer from the ringing and rise time issues associated with digital square waves passing through a converter.

Other benefits of the dedicated hardware include a 2 dB improvement in THD+N (to –110 dB typical) and an increase in maximum output level from 21.21Vrms to 26.66 Vrms (balanced).

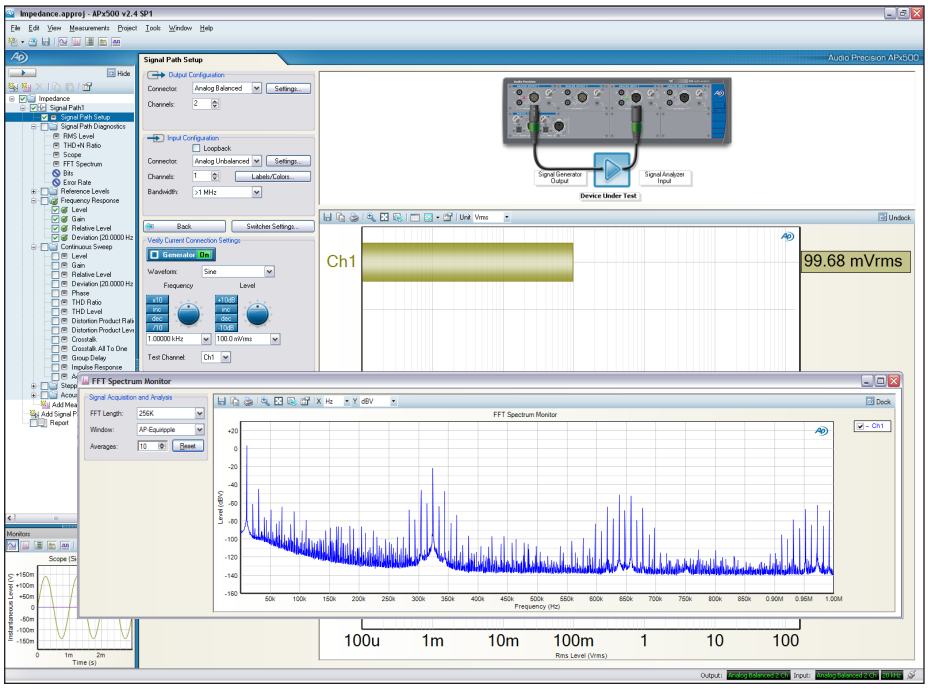


The most precise square waves in the world

BW52 Ultra-high Bandwidth option

The BW52 Ultra-high Bandwidth option extends the APx's one million point, 24-bit FFT all the way from DC to 1 megahertz, making APx ideal for looking at out-of-band noise in Class-D amplifiers, sigma-delta converters and other modern audio devices.

By comparison, other audio analyzers have a maximum FFT bandwidth of 250 kHz or less, making them unsuitable for looking at switching frequencies that often center around 300–500 kHz. RF spectrum analyzers can have much wider bandwidth, but their low impedance, low resolution and low tolerance to high input levels again make them unsuitable for audio design.



▲APx UI with 24-bit 1 MHz FFT

APx525 Family Audio Analyzer Key Specifications

SYSTEM PERFORMANCE

Residual THD+N (20 kHz BW)
–105 dB + 1.3 µV
Typical <–108 dB (1 kHz, 2.5 V)
Typical <–110 dB (1 kHz, 2.5 V) [with AG52]

GENERATOR PERFORMANCE

Sine Frequency Range
0.1 Hz to 80.1 kHz

Square Frequency Range [requires AG52]
10.0 Hz to 20.1 kHz

Frequency Accuracy
2 ppm

IMD Test Signals
SMPTE, MOD, DFD

DIM Test Signals [requires AG52]

Maximum Amplitude (balanced)
21.21 Vrms
26.66 Vrms bal, 13.33 Vrms unbal,
when Fs ≥10 Hz [with AG52]

Amplitude Accuracy
±0.03 dB (+15° C – +30° C)

Flatness (20 Hz–20 kHz)
±0.008 dB

Analog Output Configurations
Unbalanced & Balanced

Digital Output Sampling Rate
22 kHz–192 kHz

Dolby / dts Generator
Yes

ANALYZER PERFORMANCE

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

Maximum Bandwidth
>90 kHz
>1 MHz [with BW52]

IMD Measurement Capability
SMPTE, MOD, DFD

Amplitude Accuracy (1 kHz)
±0.03 dB (+15° C – +30° C)

Amplitude Flatness (20 Hz–20 kHz)
±0.008 dB

Residual Input Noise (20 kHz BW)
1.3 µV

Individual Harmonic Analyzer
d2–d10

Max FFT Length
1024K points

DC Voltage Measurement
Yes

ISO/IEC:17025 ACCREDITED

Accredited by A2LA for equipment calibration under ISO/IEC:17025.
Calibration report and test data included with all new instruments.

ACCREDITED

APx

Rev 5 X01121404

Audio precision

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