APx52x Series | AUDIO ANALYZERS

Modular 2- and 4-channel performance audio analyzers

KEY FEATURES

- 2 analog input channels (APx525)

- 4 analog input channels (APx526)

- AES/SPDIF digital I/O

- Typical THD+N < -110 dB
  [with AG52 option]

- > 1 MHz bandwidth @ 24 bits on two
  channels [with BW52 option]

- 1.2 M point FFTs

- Use Sequence Mode or new Bench
  Mode for ultimate flexibility and control

- Powerful automation and
  sophisticated reporting

- Support for the complete range of
  APx digital I/O options

APx526 4-channel analyzer

The ideal balance of analog performance and breadth of digital I/O

The **APx52x Series** of audio analyzers combines our award-winning user interface and legendary performance with a comprehensive range of modular I/O options. The APx52x Series brings AP innovations such as one-click measurements, code-free automation and sophisticated reporting to every interface in every combination.

Outstanding performance and flexibility

The APx525 ships with two channels of analog I/O and our Digital Interface Option (DIO) with AES/SPDIF digital inputs and outputs, and includes ASIO capability. If you need more than that, APx525 is ready with a full range of choices, from additional channels of analog to a chip-level digital serial interface (DSIO), HDMI+ARC, PDM (Pulse Density Modulation) or *Bluetooth*® wireless technology with built-in radio.

Need higher analog performance? With the BW52 enhanced analog bandwidth option installed, you can make a million-point FFT spectrum acquisition at 24 bits, across a bandwidth of DC to over 1 MHz on two channels. And with the AG52 enhanced analog generator option, typical system THD+N is as low as –110 dB.

The **APx526** is a four channel version for those who require additional analog input channels.

The power of APx measurement software

Across all measurements, the APx UI is fast and intuitive. Just click to select a measurement, then click to add a filter. Drag limits to set pass/fail points right on the results graph. Effortlessly specify computations for derived results. The APx generator can output steady tones, twin tones, sweeps, chirps, multitones or play WAV files as arbitrary waveforms.

Automation and reporting

Repetitive bench tests and production testing can easily be automated with the built-in measurement sequencer and saved as a project that can be used with any APx analyzer. Production Test mode provides an optional simplified operator interface with multiple run statistics, created and supervised by a manufacturing engineer. Access the API if you prefer: documentation for VB.NET, C#.NET, MATLAB, and LabVIEW is included. Create powerful reports with Microsoft Word that let you define your own formatting and add graphs, tables and logos.

OPTIONS

Select the options that match your needs. All models use the same software, so sharing projects is easy and modular hardware allows for future upgrades.
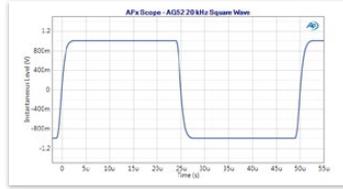
PERFORMANCE

AG52	Adds analog square wave and DIM generation, higher maximum output and improved system THD+N
BW52	Adds two channel, 24-bit, 1 MHz bandwidth analysis

DIGITAL I/O & CLOCK

Digital Serial	Adds interface for I²S, TDM, DSP	**PDM**	Adds direct connectivity for digital MEMS mics
Bluetooth®	Adds Bluetooth radios for wireless audio test	**AMC**	Advanced Master Clock adds jitter clock, sync and trigger I/O
HDMI+ARC	Adds HDMI source, sink, monitor, aux and ARC I/O	**ADIO**	Adds Advanced Digital I/O and Advanced Master Clock modules

Versatile, Powerful Audio Test

With its redesigned software platform, the powerful APx Audio Analyzer Series provides never-before-seen flexibility and usability. This bold new interface offers users two easy-to-use modes. Choose between Bench Mode for real-time visibility into device behavior across a variety of parameters, and Sequence Mode for fast production testing and automated measurements.

APx Digital Options

APx audio analyzers offer world-class performance and flexibility. Our modular systems allow you to select the interfaces and options that make sense for the work you do, covering the widest range of digital I/O in the industry. Select models support jitter generation and analysis when installed in AMC-configured APx analyzers.

HDMI

The APx HDMI option (HDMI+ARC) allows you to measure HDMI audio quality and audio format compatibility on devices such as surround sound receivers, set-top boxes, HDTVs, smartphones and tablets, and DVD or Blu-ray Disc™ players.

Bluetooth®

The APx Bluetooth Duo supports A2DP, AVRCP, HFP, and HSP profiles for comprehensive wireless audio testing. With two integrated radios, APx Bluetooth Duo easily supports source/sink, audio gateway/handsfree, and target/controller profile roles.
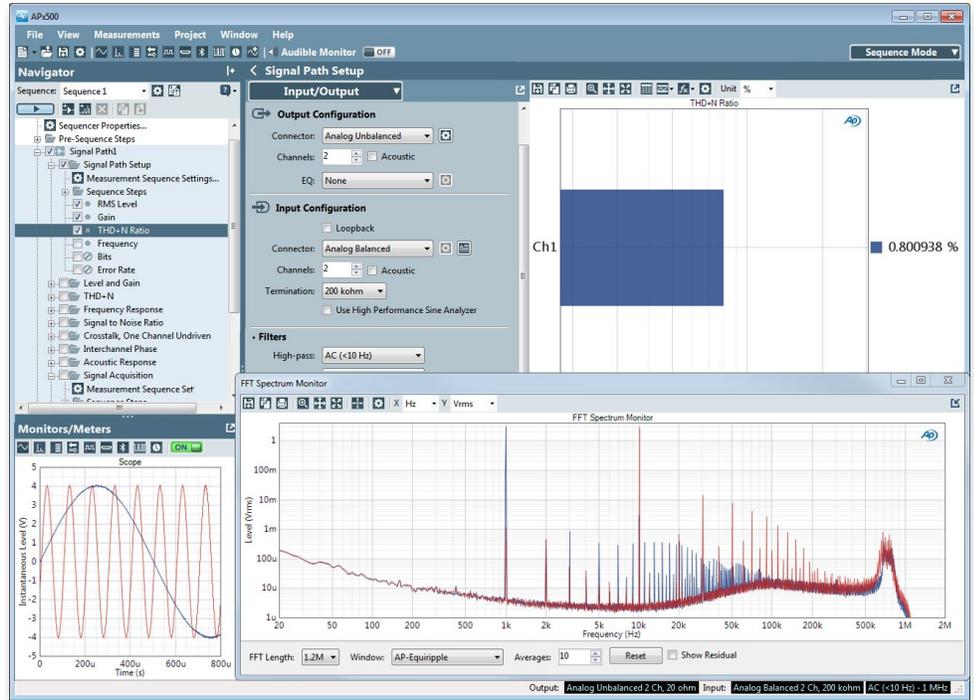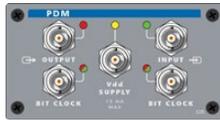
Digital Serial

The Digital Serial I/O option adds a multichannel digital serial interface. This provides a direct connection to chip-level interfaces such as I²S and supports all popular serial interface formats including left justified, right justified, and DSP. This option is jitter capable.

PDM

The APx PDM option provides direct connectivity for audio devices that have a PDM output (such as a MEMS microphone) or input (such as the decimator on a smartphone chip). In addition to all the standard audio measurements, APx provides variable DC voltage, variable sample rate, and a PSR (Power Supply Rejection) measurement to test the device's full operating parameters. This option is jitter capable.

20 kHz square wave generated with the AG52 option

HDMI Metadata Monitor showing hotplug errors in-stream

APx500 UI with 24-bit 1 MHz FFT spectrum monitor display

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 30.0 kHz

Frequency Accuracy
3 ppm

IMD Test Signals
SMPTE, MOD, DFD; DIM [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 to +30° C)

Flatness (20 Hz - 20 kHz)
±0.008 dB

Analog Output Configurations
Unbalanced and balanced

Digital Output Sampling Rate
27 kS/s - 200 kS/s*

Dolby / DTS Generator
Yes (encoded file)

ANALYZER PERFORMANCE

Maximum Rated Input Voltage
160 Vrms

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

IMD Measurement Capability
SMPTE, MOD, DFD

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

Maximum FFT Length
1248K points

DC Voltage Measurement
Yes

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

ACCREDITED
Certificate # 2527.01

Optical 27 kS/s to 108 kS/s

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