



## 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

## 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.



APx526 4-channel analyzer

**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

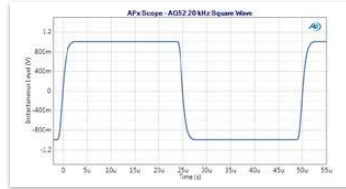
- AG52** Adds analog square wave and DIM generation, higher maximum output and improved system THD+N
- BW52** Adds two channel, 24-bit, 1 MHz bandwidth analysis

#### DIGITAL I/O & CLOCK

- Digital Serial** Adds interface for I<sup>2</sup>S, TDM, DSP
- Bluetooth®** Adds Bluetooth radios for wireless audio test
- HDMI+ARC** Adds HDMI source, sink, monitor, aux and ARC I/O
- PDM** Adds direct connectivity for digital MEMS mics
- AMC** Advanced Master Clock adds jitter clock, sync and trigger 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.



20 kHz square wave generated with the AG52 option



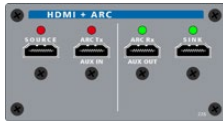
HDMI Metadata Monitor showing hotplug errors in-stream

## 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®

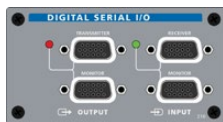
The APx Bluetooth Duo supports A2DP, AVRCP, HFP, and HSP profiles for



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



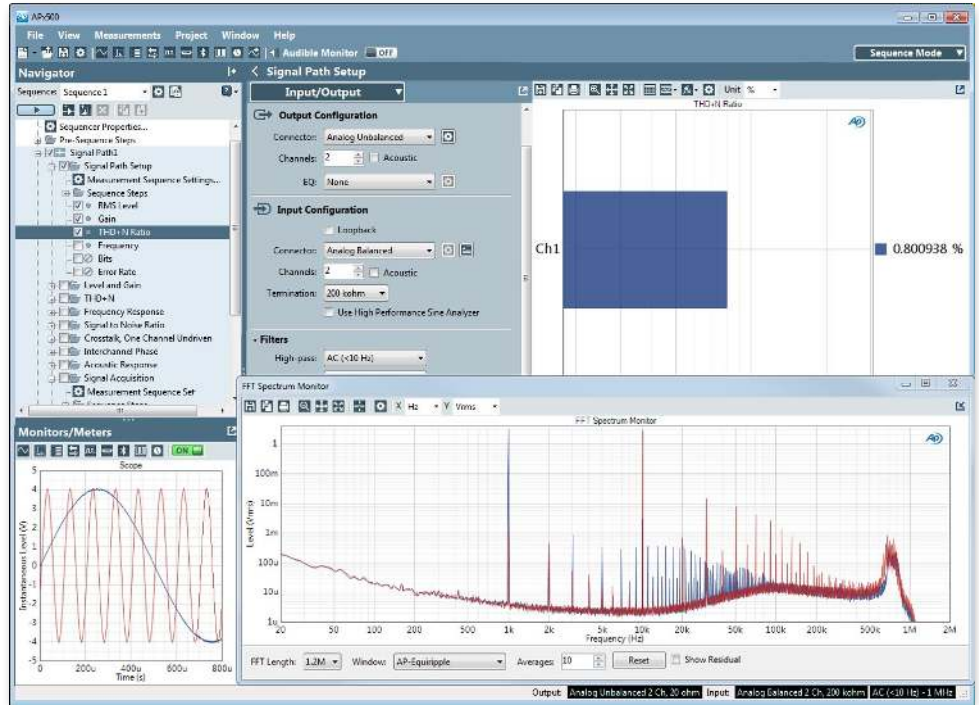
a direct connection to chip-level interfaces such as I<sup>2</sup>S and supports all popular serial interface formats including left justified, right justified, and DSP. This option is jitter capable.

### 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.



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  $\mu$ V  
 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  $F_s \geq 10$  Hz [with AG52]

**Amplitude Accuracy**  
 $\pm 0.03$  dB (+15° C to +30° C)  
**Flatness (20 Hz - 20 kHz)**  
 $\pm 0.008$  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)**  
 $\pm 0.03$  dB (+15° C to +30° C)  
**Amplitude Flatness (20 Hz - 20 kHz)**  
 $\pm 0.008$  dB

**Residual Input Noise (20 kHz BW)**  
 1.3  $\mu$ V

**Individual Harmonic Analyzer**  
 d2-d10

**Maximum FFT Length**  
 1248K points

**DC Voltage Measurement**  
 Yes



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

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