APx525 Family Audio Analyzers

Audio test and measurement for today's technologies

APx525 2-channel analyzer,
shown with Digital Serial I/O, HDMI+ARC and *Bluetooth* options.

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]
- 24-bit, 1M point, 1 MHz FFT available [with BW52 option]
- A powerful, intuitive UI with one-click measurements
- Powerful automation and sophisticated reporting
- Support for the complete range of APx digital I/O options

APx526 4-channel analyzer

The **APx525** family of audio analyzers combines our award-winning user interface and legendary performance with a comprehensive range of modular I/O options. The **APx525** family 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. 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 1 MHz. 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 addition channels of input.

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 than can be used any APx analyzer. Access the API if you prefer: documentation for VB.NET, C#.NET and LabVIEW is included. Create powerful reports with Microsoft Word that let you define your own formatting and add graphs, tables and logos.

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 Options

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

Digital I/O Options

Digital Serial	Adds interface for I²S, TDM, DSP
Bluetooth	Adds *Bluetooth* radio for *Bluetooth* audio test
HDMI+ARC	Adds HDMI source, sink, monitor, aux and ARC I/O
PDM	Adds direct connectivity for digital MEMS mics
ASIO	Adds software connectivity for PC audio interfaces

The APx500 advantage

Audio Precision has been a leader in audio test since 1985. The APx500 software that powers our APx analyzers is the most powerful and elegant audio test engine we've ever developed, encapsulating our many years of experience so that you can get accurate, meaningful results in the shortest time and with the least effort.

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.

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, HD TVs, smartphones and tablets, and DVD or Blu-ray Disc™ players.

Bluetooth®

The APx *Bluetooth* option is the best solution in the world for testing *Bluetooth* audio. No other analyzer combines integrated *Bluetooth* controls with APx's best in class speed, ease-of-use and performance.

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.

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.

1 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 display overlay

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 [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 & 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 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

Max FFT Length
1248K points

DC Voltage Measurement
Yes

ACCREDITED

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

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