



# APx58x B Series | AUDIO ANALYZERS

8- and 16- channel modular audio analyzers



## KEY FEATURES

- Multichannel analog configurations  
APx582: 8 inputs / 2 outputs  
APx585: 8 inputs / 8 outputs  
APx586: 16 inputs / 8 outputs
- AES/SPDIF digital I/O
- Typical THD+N < -107 dB
- A powerful, intuitive UI with one-click measurements
- Transfer Function and Open-Loop Chirp Measurements
- Support for the complete range of APx digital I/O options

## Channel count meets broad range of digital I/O for simultaneous multichannel audio test

The **APx58x B Series** combines an award-winning user interface with Audio Precision's legendary commitment to fast and accurate performance. APx's user-friendly innovations include a range of connectivity options, two easy-to-use UI modes, one-click measurements, code-free automation, a sophisticated reporting engine, and multiple signal paths within a project.

### A true multichannel analyzer

The **APx585 B Series** is a true multichannel audio analyzer, with 8 simultaneous analog outputs and inputs for testing multichannel audio devices. A multichannel analyzer allows not just faster testing, but also a complete picture of performance that a two channel analyzer with switchers might miss, such as output sag across channels during full power output tests or phase and crosstalk interactions. With the HDMI option, it is ideal for designing and testing consumer devices such as home theatre receivers.

The **APx586 B Series** adds a second input module for 16 simultaneous analog input channels, ideal for high-speed, high-channel count test such as automotive or pro audio mixers and other applications.

The **APx582 B Series** provides the same 8 channels of analog input, but with 2 channels of high-performance analog output that includes DIM/TIM distortion tests and selectable output impedances of 20, 50, 75, 100, and 600  $\Omega$ .

### 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.



APx586 B Series 16-channel analyzer



APx582 B Series 8-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.

### DIGITAL I/O

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



## Versatile, Powerful Audio Test

Combined with APx audio measurement software, the B Series APx audio analyzers integrate power, flexibility and ease-of-use. 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 B Series 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 B Series 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 B Series 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.



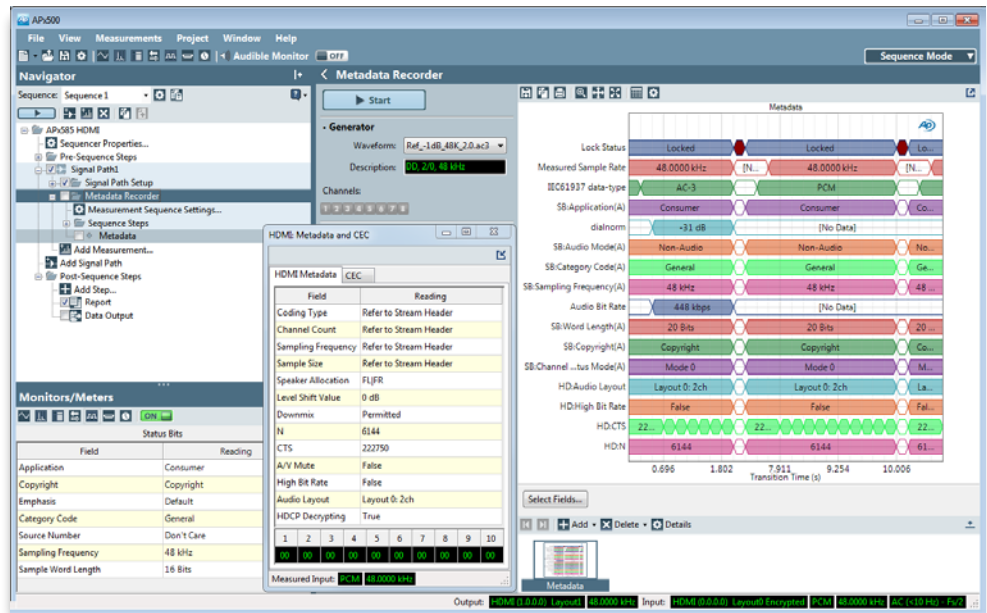
### Digital Serial

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.

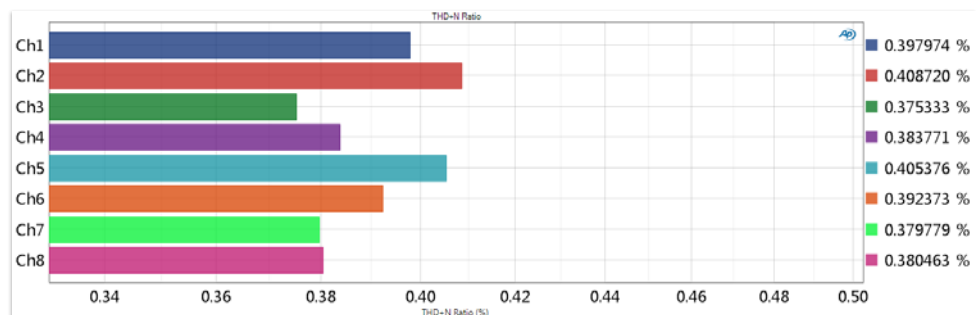


### PDM

The B Series 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 Measurement Software metadata recorder tracking metadata changes during an HDMI hotplug event.



APx 585 and 586 are true multichannel analyzers; shown above is an 8-channel THD+N Ratio measurement.

## KEY SPECIFICATIONS

### SYSTEM PERFORMANCE

Residual THD+N (20 kHz BW)  
-103 dB + 1.4 µV  
Typical <-108 dB (1 kHz, 2.5 V)

### GENERATOR PERFORMANCE

Sine Frequency Range  
5 Hz to 80.1 kHz  
Frequency Accuracy  
3 ppm  
IMD Test Signals  
SMPTE, MOD, DFD  
Maximum Amplitude (balanced)  
14.4 Vrms (APx585 & APx586)  
26.66 Vrms (APx582)  
Amplitude Accuracy  
±0.05 dB  
Flatness (20 Hz - 20 kHz)  
±0.008 dB  
Analog Output Configurations  
Unbalanced and balanced  
Digital Output Sampling Rate  
27 kS/s to 200 kS/s\*  
Dolby / DTS Generator  
Yes (encoded file)

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

### ANALYZER PERFORMANCE

Maximum Rated Input Voltage  
160 Vpk  
Maximum Bandwidth  
1 to 16 channels of analog input 90 kHz  
IMD Measurement Capability  
SMPTE, MOD, DFD  
Amplitude Accuracy (1 kHz)  
±0.05 dB  
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

## APx58x B Series Software Options

APx500 software options provide measurements and functionality beyond the core set of capabilities standard for the APx58x 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

Part No.	Description	Measurements/Features
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.

### 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.