

Audio Analyzer- AA1000



KEY FEATURES

- Based on **Audio Precision APx** Systems.
- 10" LCD Touch Display
- Ethernet and USB Connectivity Ports
- USB Ports for Mouse & Keyboard
- HDMI port for external monitor connection for easy larger display
- Ability to bypass onboard PC & Touchscreen and connect directly to APx via USB
- 3.5mm headphone jack
- GPIO port – logic level signalling & sensing
- 5U rack mount configuration optional
- Transport Case
- APx500 Software and licenses support
- Multiple Ground lugs for better audio measurements
- Optional AES3 and SPDIF interface module
- 2 high performance options – for uses where high accuracy and extremely low noise is required

The Audio Analyzer AA1000 integrates an Audio Precision APx Analyzer into a single enclosure working system, offering precise measurement and analysis of various audio signals. This comprehensive kit was developed specifically for application where a standalone system was required but no compromise could be made on the performance and reliability of an APx machine. All the analog test features of the APx system are retained in a convenient layout.

Equipped with a 10" LCD touch display, the analyzer provides real-time information on the APx500 measurement control software. The APx500 Measurement Software provides advanced audio measurement interface, allowing for complex procedures, user prompts, limits, and external application calls directly through the GUI.

Custom interfaces and application-to-application automation can be developed using the extensive APx API, with documentation and examples available for Visual Basic, NET, C#, MATLAB, LabVIEW, and Python. Projects and automation can be shared across APx units globally.

The analyzer features an Ethernet port for remote control over LAN network (via remote desktop or other remote access softwares) and a HDMI 2.0 port facilitates connectivity with external display systems. Additionally, three USB ports on the front panel allow for mouse and keyboard connections, and any data transfer that may be required.

A power socket and safety switch are provided to meet power requirements, with ground lug pins for proper grounding connections between the Device Under Test (DUT) and the unit.



A powerful Mini PC with the latest configuration is integrated into the analyzer to meet the system requirements of the control software, ensuring efficient performance. Users can easily view results and operate the APx500 measurement software on an external large screen using the HDMI port. The USB ports can be used to connect Keyboard, mouse, pen drive, printer, etc. The system comes with latest Microsoft Windows installation and license.

The front panel includes two female XLR and four Banana connectors for the analog balanced input section, as well as two male XLR and four Banana connectors for the analog balanced output section. Similarly, two female BNC connectors are provided for each section of the unbalanced input and output, with LEDs indicating connectivity status.



For audio monitoring, a 3.5mm headphone jack supporting stereo or mono mode is included. Power supply is included and only requires a standard 6A IEC cable (supplied along). With more than 30 years of equipment design experience at Comcon, the chassis is reliable from all aspects – load bearing, ventilation, powder coating, etc.

Audio Measurements (options may be required):

Crosstalk • THD+N • DUT Delay • Frequency Measurement • Frequency Response • Interchannel Phase • Level & Gain
 • Level Ratio • Amplifier Power • Signal-to-Noise Ratio • Audio & Measurement Recorder • Noise • Pass/Fail • Q-peak
 Noise • Distortion Products • SINAD • Signal Acquisition (FFT View) • Stepped Frequency Sweep • Stepped Level Sweep
 • Transfer Function • Acoustic Measurements

Achieve automation effortlessly without coding, complemented by a fully featured API

Automation and reporting tasks are streamlined, and repetitive bench tests and production testing can be automated effortlessly using the integrated measurement sequencer. At any time, a project can be saved for later retrieval with the current data – user settings, test settings and test result data.

For production testing, the Production Test mode offers an optional simplified operator interface, featuring multiple run statistics. These modes can be created and supervised by a manufacturing engineer, ensuring smooth operations.

Users also have the option to access the API for customization. Comprehensive documentation for VB.NET, C#.NET, MATLAB, and LabVIEW is provided, empowering users to tailor their testing processes to specific requirements.

Moreover, the analyzer allow the creation of powerful reports using Microsoft Word*. Users can define formatting preferences and include graphs, tables, and logos, facilitating clear and comprehensive presentation of test results.

*Microsoft word license is not included and needs to be separately added by User if needed.

AA1000 SPECIFICATIONS

Analyzer

- **Maximum Rated Input Voltage** :125 Vpk
- **Maximum Bandwidth** : >90 kHz
- **IMD Measurement Capability** : SMPTE, MOD, DFD
- **Amplitude Accuracy (1 kHz)** : ± 0.05 dB
- **Amplitude Flatness (10 Hz–20 kHz)** : ± 0.010 dB
- **Residual Input Noise (20 kHz BW)** : 1.4 μ V
- **Individual Harmonic Analyzer** : d2–d10
- **Max FFT Length** : 1024K points

Generator

- **Sine Frequency Range** : 2.0 Hz to 80.1 kHz
- **Frequency Accuracy** : 3 ppm
- **IMD Test Signals** : SMPTE, MOD, DFD
- **Maximum Amplitude (balanced)** : 16.00 Vrms
- **Amplitude Accuracy** : ± 0.05 dB
- **Flatness (5 Hz–20 kHz)** : ± 0.010 dB
- **Analog Output Configurations** : Unbalanced, balanced, common mode

OPTION: HIGH PERFORMANCE (OHP)

Analyzer

- **Maximum Rated Input Voltage** : 230 Vpk
- **Maximum Bandwidth** : >90 kHz, >1 MHz [with BW52]
- **IMD Measurement Capability** : SMPTE, MOD, DFD
- **Amplitude Accuracy (1 kHz)** : ± 0.03 dB
- **Amplitude Flatness (20 Hz–20 kHz)** : ± 0.008 dB
- **Residual Input Noise (20 kHz BW)** : 1.3 μ V
- **Residual THD+N (20 kHz BW)** : -105 dB + 1.4 μ V
Typically < -110 dB (1 kHz, 2.5 V)
- **Individual Harmonic Analyzer** : d2–d10
- **Max FFT Length**: 1248K points

Generator

- **Sine Frequency Range** : 0.1 Hz to 80.1 kHz
- **Frequency Accuracy** : 3 ppm
- **IMD Test Signals** : SMPTE, MOD, DFD
- **Maximum Amplitude (balanced)** : 21.21 Vrms
- **Amplitude Accuracy** : ± 0.03 dB
- **Flatness (20 Hz–20 kHz)** : ± 0.008 dB
- **Residual THD+N (20 kHz BW)** : -105 dB + 1.4 μ V
Typically < -110 dB (1 kHz, 2.5 V)
- **Analog Output Configurations** : Unbalanced & balanced

OPTION: VERY HIGH PERFORMANCE (OVHP)

Analyzer

- **Maximum Rated Input Voltage** : 230 Vpk
- **Maximum Bandwidth** : >1 MHz
- **IMD Measurement Capability** : SMPTE, MOD, DFD, DIM
- **Amplitude Accuracy (1 kHz)** : ± 0.03 dB
- **Amplitude Flatness (10 Hz–20 kHz)** : ± 0.008 dB
- **Residual Input Noise (22 kHz BW)** : ± 1.0 μ V
- **Residual THD+N (22 kHz BW)** : -117 dB + 1.0 μ V
Typically < -120 dB (1 kHz, 2.0 V)
- **Individual Harmonic Analyzer** : H2–H10
- **Max FFT Length** : 1248K points

Generator

- **Sine Frequency Range** : 0.001 Hz to 80 kHz, DAC 5 Hz to 204 kHz, Analog
- **Frequency Accuracy** : 3 ppm, DAC 30 ppm, Analog (Precision Tune)
- **IMD Test Signals** : SMPTE, MOD, DFD, DIM
- **Maximum Amplitude (balanced)** : 26.66 Vrms
- **Amplitude Accuracy** : ± 0.03 dB
- **Flatness (5 Hz–20 kHz)** : ± 0.008 dB
- **Residual THD+N (22 kHz BW)** : -117 dB + 1.0 μ V
Typically < -120 dB (1 kHz, 2.0 V)
- **Analog Output Configurations** : unbalanced, balanced (differential & single-ended), CMTST

OPTION: DIGITAL IO (DIO)

- Digital I/O capability with support for AES3 (AES/EBU) and SPDIF. Supporting upto 192KHz sample rate and 24 bit depth. Performance and features vary with OHP and OVHP options.