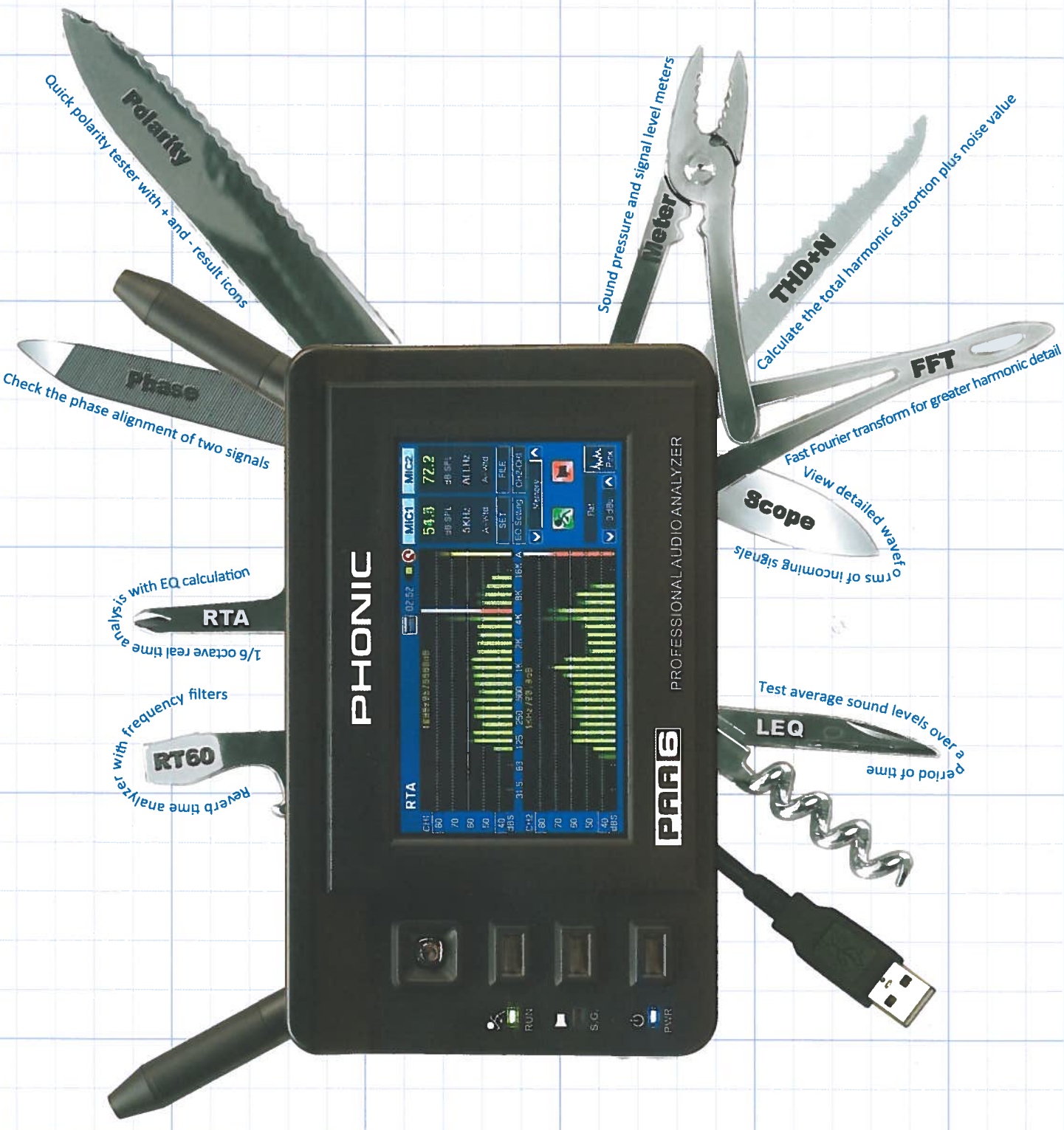
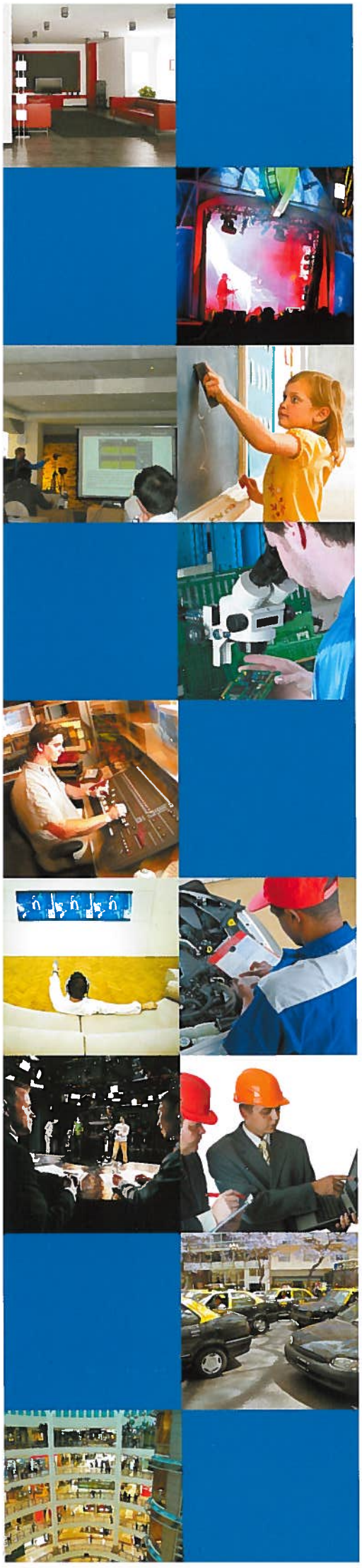
# Tools for Precision Audio Engineering




## Audio Testing

PHONIC



# AUDIO ANALYZER AND TOOLS

The Phonic PAA3 and PAA6 audio analyzers are two investments you can't afford not to make. Phonic's range of audio analyzers is ideal for testing of environmental noise, product compliance and maintenance, and general acoustical analysis in indoor and outdoor settings. Each analyzer offers vital measurement tools for engineers and compliance officers. Such tools include real time audio spectrum analyzer, reverb time measurement, signal generator, EQ setting calculator and polarity testing. Including all of these great tools while also featuring a wider array of essential sound analysis functions, the PAA6 offers fast Fourier transform, total harmonic distortion plus noise calculation, equivalent continuous sound level, phase and scope. Both the PAA3 and PAA6 feature onboard storage capabilities with a USB connector that enables you to store all measurements on your computer for later reference. Phonic's series of feature-rich portable audio testers is sure to satisfy even the most discerning audio professional.

## Series Features:

- Built-in factory-calibrated condenser measurement microphone(s)
- Useful functions include RTA, RT-60, polarity and meter (dB SPL, dBu, dBV & Volt)
- Signal generator with balanced XLR output
- XLR input and output connectors
- Onboard storage capabilities
- Power adapter included

## PAA6 – 2 Channel Audio Analyzer with Color Touch Screen

- 480 x 272 color LCD touch screen
- Dual channel operation for more precise measurements
- Tone generator includes pink noise, white noise, sine wave, sweep, polarity, triangle and square
- LEQ allows for measurements between 1 minute and 48 hours in 1 octave resolution
- Fast Fourier transform for measuring fine acoustic details
- Oscilloscope for viewing waveforms and quickly identifying clipping
- View total harmonic distortion plus noise rate in percentage
- Quickly check the phase between two incoming signals
- Long-lasting rechargeable lithium-ion battery system
- USB port and SD card slot included for storing and retrieving data

## PAA3 – Portable Audio Analyzer

- 31-band EQ setting value display (boost/cut)
- Noise generator with pink noise, 1kHz and polarity test signal
- Memory and average calculation function
- Sound Pressure Level Meter from 30 dB to 130 dB
- Audio test signal CD with a wide range of test signals
- Operates seven hours with four AA batteries
- USB interface for Windows-based desktop software control

*Phonic's Portable Audio Analyzer series of products are ideal for testing procedures outlined by OSHA, FIOSH, AMI, BAuA and other world-wide occupational health and safety organizations.*

## RTA

Take real-time measurements in 1, 2/3, 1/3 and 1/6 octave resolution on the PAA6, or in 1/3 octave resolution on the PAA3. Both models feature weighting and response time options.

## RT60

Measure the reverb time of any room using the RT60 function. You can view a standard reverb graph and set frequency filters using the PAA6, while the PAA3 gives accurate reverb time calculation only.

## Polarity

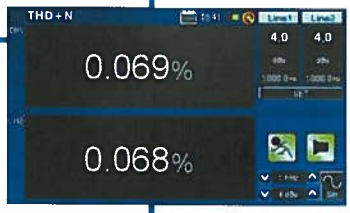
Check the polarity of any loudspeaker with this function. The polarity signal can be taken from the PAA3 or PAA6's own signal generator, or the Phonic audio analyser can take measurements with any standard polarity signal.

## Meter

Measure sound pressure, dBu, dBV and voltage levels through this highly accurate meter. Take sound pressure level measurements between 30 and 130 dB SPL; dBu measurements between -85 and 25 dBu (-50 and 40 dBu on the PAA3); dBV between -87.2 and 22.8 dBV (-52 to 38 dBV on the PAA3), and; Voltage measurements can be taken between 0.0436mV and 13.8V (5mV to 80V on the PAA3).

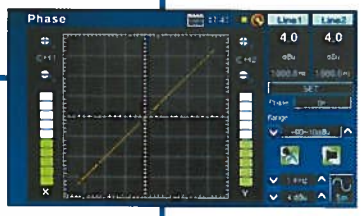
## FFT

The Fast Fourier Transform acts as a high resolution real time analyzer with a much wider frequency range and fast response time allowing for greater accuracy and harmonic detail. This feature is found on the PAA6 audio analyzer.



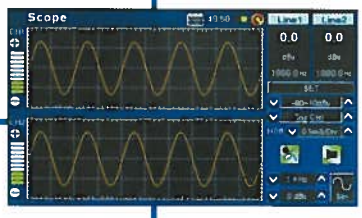

## THD+N

Run a test tone through any piece of audio equipment and back to the PAA6 to read the standardized total harmonic distortion plus noise results of that unit.that unit.




## Phase

View the difference in phase of two signals through this accurate phase meter found on the PAA6. You can zoom into the X and Y axis of the graph as necessary using the on screen controls.

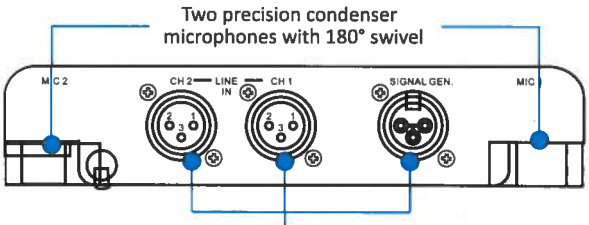



## Scope

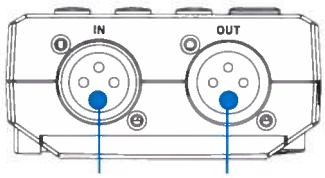
View the waveform of any signal through the PAA6's oscilloscope. Horizontal division time and level range are both user definable, and you can zoom in and out to better view the waveform.

## LEQ

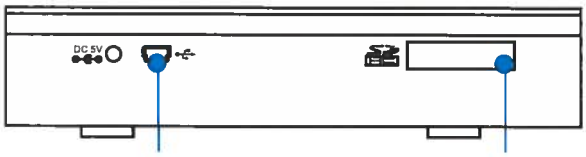
Find the equivalent continuous noise level of a room or other venue over a period of time using the PAA6's LEQ function. Measurements can be taken anywhere between 1 minute and 48 hours.




Two balanced XLR inputs and XLR signal generator output

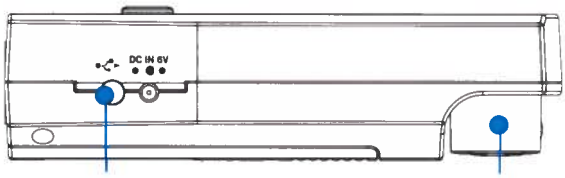



Balanced XLR input and XLR signal generator output




Data connectivity to computer via USB

Supports SD-HC memory cards up to 8 GB




Real time connectivity to computer via USB

Precision condenser microphones with 180° swivel

## Specifications

| | | PAA6 | PAA3 |
|---|---|---|---|
| RTA | Frequency | 20 Hz to 20 KHz, all frequencies | 20 Hz to 20 KHz, all frequencies |
| | Unit | dB SPL, dBu, dBV, Volt | dB SPL, dBu, dBV, Volt |
| | EQ Setting | EQ Cut or Boost | EQ Cut or Boost |
| | Subtract / Sum | CH1+CH2, CH1-CH2, CH2-CH1 | Average |
| | Peak Hold | Off, 0.5 ms, 1 Sec, 2 Sec, 4 Sec, Continue | - |
| | Frequency Detect | On, Off | - |
| | Dynamic Range | 30 to 130 dB. 60dB display range, eg. 70 tp 130, 60 to 120, 50 to 110 | 30 to 130dB |
| | dB-scale setting | +/- 5dB steps on Y-Axis | - |
| | Octave | 1/1, 1/3, 2/3, 1/6 | 1/3 |
| | Weighting | A, B, C, Flat | A, C, Flat |
| FFT | Frequency Range | 13 selectable bandwidths | - |
| | Unit | dB SPL, dBu, dBV, Volt | - |
| | Subtract / Sum | CH1+CH2, CH1-CH2, CH2-CH1 | - |
| | Peak Hold | Off, 0.5 ms, 1 Sec, 2 Sec, 4 Sec, Continue | - |
| | Frequency Detect | On , Off | - |
| | Weighting | A, B, C, Flat | - |
| RT-60 | Unit | dB SPL, dBu, dBV, Volt | dB SPL |
| | Trigger | Internal , External | - |
| | Weighting | A, B, C, Flat, 1 Octave | A, C, Flat |
| THD+N | Unit | dB SPL, dBu, dBV, Volt | - |
| Meter | Level Range | 30 to 130 dB SPL, -85 to 25 dBu, -87.2 to 22.8 dBV, 0.0436mV to 13.8V | 30 to 130 dB SPL, -50 to 40 dBu, -52 to 38 dBV, 5mV to 80V |
| | Unit | dB SPL, dBu, dBV, Volt | dB SPL, dBu, dBV, Volt |
| | Max | Peak Hold | Peak Hold |
| Phase | Phase Degree | Phase Correlation (out of phase or in phase) | Phase Correlation (out of phase or in phase) |
| Scope | Trigger | CH1, CH2, CH1+CH2 | - |
| | Mode | Auto, Normal | - |
| | Unit | dB SPL, dBu, dBV, Volt | - |
| Polarity | Polarity Checker | Negative, Positive | - |
| | Unit | dB SPL, dBu, dBV, Volt | - |
| LEQ | Weighting | A, B, C, Flat | - |
| | Selectable Frequency | 31.5Hz, 63Hz, 125Hz, 250Hz, 500Hz, 1KHz, 2KHz, 4KHz, 8KHz, 16KHz | - |
| Omni-directional Microphone | | Built-in condenser mic x2 | Built-in condenser mic |
| Microphone Element | | Back-Electret condenser | Back-Electret condenser |
| Inputs / Outputs | | XLR Input x2 (Balanced/Unbalanced) XLR output x1 (Servo Balanced) | 1 x XLR Input, 1 x XLR Output (Balanced/Unbalanced) |
| Interface | | USB High Speed 2.0 Interface | USB 1.1 Interface |
| Display | | 480 x 272, 16-bit, full color touch screen | 160 x 160 monochrome |
| Range | | 30 to 130 dB SPL , -85 to 25 dBu | 30 to 130 dB SPL , -50 to 40 dBu |
| Memory | | SDHC Class 4 card slot and internal memory (100 MB) | 10 RTA + 6 average |
| Generator | | Sweep, Sine, Triangle, Square, Polarity, Pink noise, White noise | Pink noise, 1 KHz, Polarity |
| DC Input | | 5V | 6V |
| Battery | | Rechargeable Lithium Ion DC3.7V-2200mAh | 4 x AA |
| Battery Life | | 3 Hours | 7 Hours |
| Battery Charging Time | | 3 Hours | - |
| Dimensions (WxHxD) | | 174.5 x 40 x 105.5 mm (6.89" x 1.57" x 4.17") | 144.95 x 82.95 x 39.42 mm (5.7" x 3.26" x 1.55") |
| Weight | | 460g (1 lbs) | 354g (0.78 lbs) |