

PAS Phonatory Aerodynamic System



A comprehensive airflow system for the voice lab

PHONATORY AERODYNAMIC SYSTEM (PAS)

KayPENTAX is pleased to offer the Phonatory Aerodynamic System (PAS) for measuring airflow, pressure, and other parameters related to speech and voice production. Based on years of experience with speech analysis and aerodynamic instrumentation, the system was designed at KayPENTAX with input from leading clinicians and voice scientists.

Voice clinics routinely collect imaging (e.g., stroboscopy) and acoustic data when evaluating patients. Measurements obtained from PAS complement these imaging and acoustic analysis data to provide a more comprehensive understanding of phonatory behavior that can be tracked from initial evaluation through intervention. PAS is ideally suited for speech pathologists, otolaryngologists, phoniatricians, and linguists who desire a comprehensive and fully integrated phonatory airflow system.



Using the dual handles, the client holds the PAS mask up to the face during data collection.

PAS Hardware

PAS contains all of the necessary hardware and peripheral components (except the PC) for a complete system. These have been carefully selected and matched to ensure reliable data acquisition and measurements. The external PAS hardware module has bilateral handles (held by the client during data acquisition) with the face mask, pneumotach, pressure transducer, required tubing, and microphone all integrated in an ergonomic construction. All aspects of signal conditioning, filtering, and data sampling have been designed specifically to comply with the stringent requirements of accurate phonatory and aerodynamic data acquisition. The microphone for pitch and amplitude calculations is mounted at a fixed distance and is pre-calibrated at the factory for each system to maximize accuracy. Both adult and pediatric face masks (both reusable and disposable) are supplied.

PAS Software

PAS software is menu-driven with a convenient set of protocols based on typical phonatory/aerodynamic tasks that have been reported in the literature. The protocols contain instructions to elicit both speech and non-speech tasks in order to calculate a comprehensive set of data related to phonatory function. The protocols step the user through each stage of the data acquisition process with prompts so that even occasional users can easily operate the system. PAS calculates average phonatory flow rate, sound pressure level, fundamental frequency, vital capacity, glottal resistance, subglottal pressure (derived), and efficiency measurements. In addition to the standard protocols, PAS contains the flexibility to allow users to construct their own.



PAS components are ergonomically integrated on the hardware module.



A one-liter syringe is provided for calibration to ensure accurate measurements.

Phonatory Aerodynamic System

Software Version 3.2

**NEW
FEATURE**

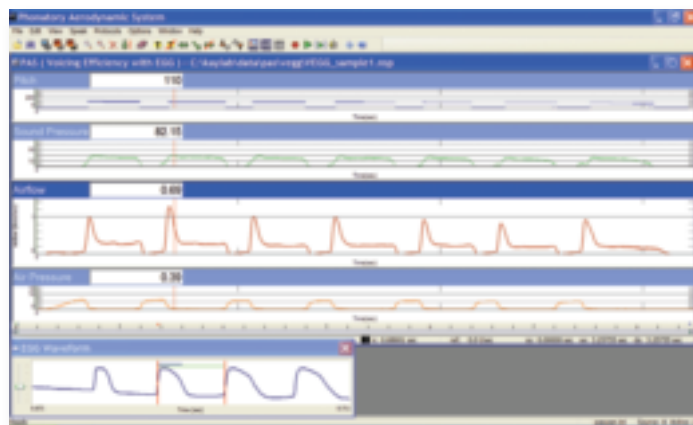
Concurrent capture and display of Electroglottograph (EGG) data with aerodynamic data

Breaks New Ground

PAS is the first system that conveniently allows clinicians and researchers to acquire aerodynamic, acoustic, and EGG data in one, integrated, hardware/software platform for a more comprehensive, noninvasive assessment of vocal fold dynamics.

Features and Benefits

- In addition to Fo, sound pressure, airflow, and air pressure, you can now display, in real time, the EGG waveform and a user-defined EGG quotient.
- The EGG waveform is linked, via cursor location, to all other PAS data allowing for synchronized analysis of all measurements.
- An EGG (purchased separately) is simply plugged into the auxiliary port of the PAS hardware module for easy setup in the clinic.
- The PAS software allows you to select the EGG quotient (contact, open, user-defined) to use and report as a measure of patient performance.



Concurrent display of EGG waveform with aerodynamic and acoustic parameters

Updated Computer Requirements (version 3.2 software or higher)

- Pentium IV $\geq 1\text{GHz}$
- Windows XP or Windows Vista operating system
- Graphics card and monitor that supports screen resolution of 1600 x 1200
- 20 GB hard disk
- 512 MB RAM
- CD or DVD drive
- One free, full-sized PCI slot
- One free USB port

For more information about PAS or other KayPENTAX products, contact:



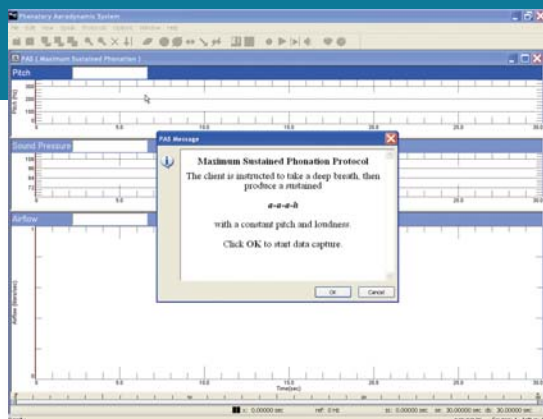
World Leaders in Speech, Voice, and Swallowing Instrumentation

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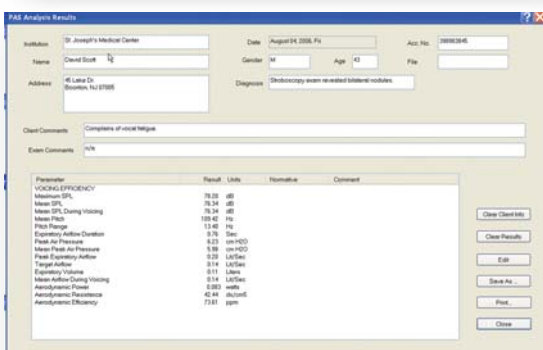
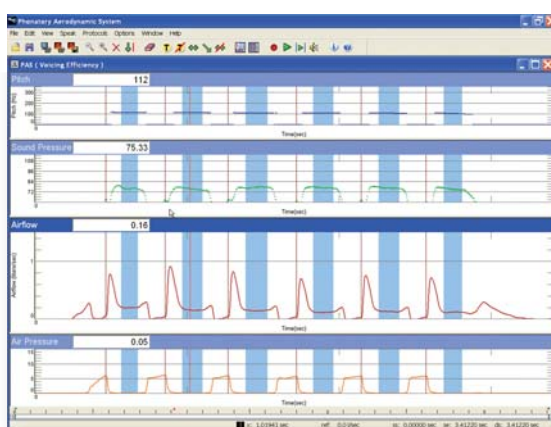
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Protocols provide step-by-step prompts during data collection.



Both graphic and quantitative summaries can be included in reports.

An Integrated System

PAS relieves clinicians and voice scientists of the burden of assembling an extensive array of components from multiple vendors for a phonatory airflow system. In addition to integrated hardware, the PAS software is designed specifically around the PAS architecture to provide optimal performance and ease of use.

FEATURES

- Fully integrated hardware/software system (requires PC host)
- Provides key airflow and pressure measurements for speech and voice
- Protocol-driven operation for easy data collection and measurements
- Graphic and quantitative data for reports
- Ideal complement to imaging and acoustic analysis systems from KayPENTAX

Complementary Voice Lab Instrumentation

PAS is one of many instruments provided by KayPENTAX that are used in leading voice clinics worldwide. These include videostroboscopy, high-speed video, flexible endoscopes (fiberoptic and videoscopes), acoustic analysis and visual feedback instruments, ambulatory phonation monitoring, electroglottography, videokymography, and selected laser instrumentation. For more information about these, and other, KayPENTAX products, visit us online at www.kaypentax.com.

PAS Components

- Calibration syringe
- 300 ml pneumotach (plus one spare)
- PAS hardware module & PCI card
- Flow masks (standard and disposable; adult and pediatric)
- Microphone (pre-calibrated)
- Intraoral pressure tubes
- Cardboard tubes

Computer Requirements for PAS

- Pentium II PC (or higher)
- Windows XP or 2000 OS
- Available PCI slot in PC
- VGA graphics
- CD ROM player
- Multimedia speaker system

Phonatory. Aerodynamic System



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and Swallowing Instrumentation

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