

# AA222/AA222h

Audio Traveller



*Diagnostic Impedance  
& Audiometry in one solution*



**Interacoustics®**

leading diagnostic solutions

# AA222/AA222h

## Audio Traveller

# Middle ear analyzer

The AA222 is the most comprehensive combination of middle ear analyzer and clinical audio-meter available. It combines all of the diagnostic middle ear analyzer tests found on the AT235 and most of the features available on our popular AD229 diagnostic audiometer – all in one small, lightweight package. This makes the AA222 ideal for the new clinic, for traveling to alternate locations, and for clinical situations where space is at a premium.

### Timeless Design

The AA222 offers a timeless design that fits the modern clinic. Ergonomically designed and user friendly the AA222, can be used as a desktop and a portable instrument. With the built-in power amplifier and test cavities it is easy and fast to set up and get started testing.

### Middle Ear Analyzer

Interacoustics middle ear analyzers are known for their "endless airflow" engineering technique. This is the perfect method for obtaining a tympanogram on crying children or difficult to test patients when physical sealing is difficult. An automatic adaptive pump speed produces tympanograms with high peak resolution without sacrificing test time. Other pump speed options are available.

The AA222 has several other features that makes it easy to use. With the push of one button you can extend the pressure range from +300 daPa to -600 daPa. With the push button on the probe, the examiner can switch between left or right ears for labeling the tests, and initiate the test. Another button labeled »child« automatically produces a moving choo-choo train as a visual distracter for the child.

### AA222h - High frequency and manual tympanometry

The AA222h provides additional high-frequency probe tones for Y-component testing in addition to the traditional 226Hz tone. With the push of a single button, the AA222h will switch to a 678, 800 or 1000 Hz probe tone. A tympanogram that is recorded using a high frequency probe tone (e.g. 1000 Hz) is considered more suitable for screening neonatal patients.

In addition to automatic mode, the pump action on the AA222h can be controlled manually. In this mode, pressure increase/decrease is controlled by keys on the front panel. Pressure speed can be toggled between three speeds.

### Reflex Tests

Traditional ipsilateral and contralateral reflex tests are standard features. The AA222 has a wide variety of test stimuli available that are usually only found on more expensive instruments. Even wide band, high pass and low pass signals are available. The examiner has two programmable test sequences available from the front panel. The manual function allows the examiner to quickly select a single frequency for test verification. Ipsilateral and contralateral reflex decay is easily accessed through the manual function.

### ETF

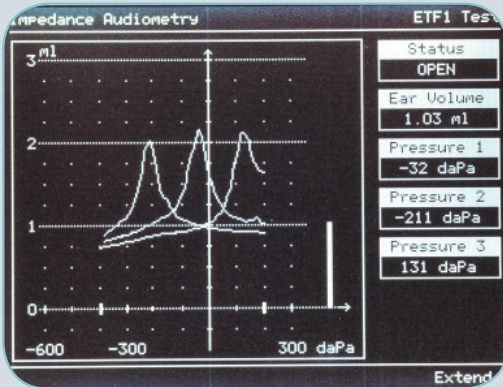
The AA222 performs a single Eustachian Tube Function test suitable for use when the eardrum is intact. Three tympanograms are produced from which the condition of the Eustachian tube can be inferred. Easy to understand instructions guide you through the ETF1 Test procedure. The AA222h has an additional ETF test suitable for when the eardrum is perforated.

### Decay – Contra and Ipsi

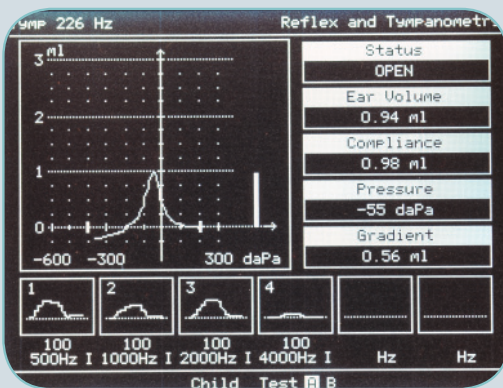
Acoustic reflex decay testing is available with ipsilateral as well as with contralateral stimulation. For stimulation of the contralateral ear the AA222 comes with a button insert receiver (CIR22) and a single DD45C headset is available as an option.

### Probe Systems

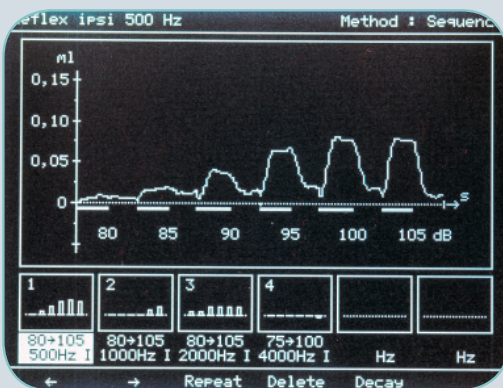
The AA222 is supplied with a combi probe system that is easily interchanged for screening and clinical testing purposes. The screening probe tip is ideal for quick tymps and a screening reflex, while the diagnostic probe provides more stability for more lengthy exams that include tymps, reflexes, reflex decay and ETF. The probe has a button for changing ears remotely from the AA222 and for starting and pausing the test.



Automated Eustachian Tube Function test is available.



Tympanogram and reflex test results displayed simultaneously.



A group of increasing stimuli for reflex testing, clear displays reflex growth with increasing intensity.



### AA222

- The most comprehensible combination unit in a small and lightweight package
- Diagnostic level impedance and audiometry measurements
- PC integration for printing, storage, sharing and hearing aid fitting

### AA222h also holds

- High Frequency probe tones
- Intact & perforated ETF tests
- Manual tymp test



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# AA222/AA222h

## Audio Traveller

# Audiometer

### Audiometry AA222

The AA222 has testing capabilities for air and bone conduction as well as speech. Dual inputs for a tape or CD player allow the examiner to conduct binaural recorded speech tests and other competing message tests for central auditory processing or hearing aid evaluations. Other tests include pure tone and Stenger speech, ABLB, Auto Threshold (Hughson-Westlake method) and SISI. Outputs are available to connect external speakers and with an appropriate amplifier AA222 will produce 90dB or more of speech in a typical sound room environment. Separate software calibration for all transducers allows the exchange of insert phones or traditional TDH39 phones with the push of a button.

### Visual child distraction

The AA222 has a selection for a moving "choo choo train" on the screen to help keep the child distracted while running tympanometry tests.

### Printing options

The AA222 has a built-in thermal printer that will print all test results.

### Portability

An optional convenient, lightweight carrying case can be purchased for those who need portability. The carrying case is custom designed to hold the AA222 and all of its accessories.



Optional carrying bag

### PC Integration, Printing and Reports

With the Diagnostic Suite software program the AA222 can interface directly to the Interacoustics OtoAccess™ database program or to NOAH on your PC. In either case, the Diagnostic Suite will make your reports stand out.

Diagnostic Suite offers features such as:

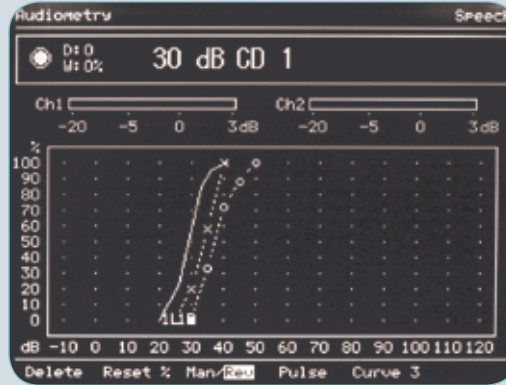
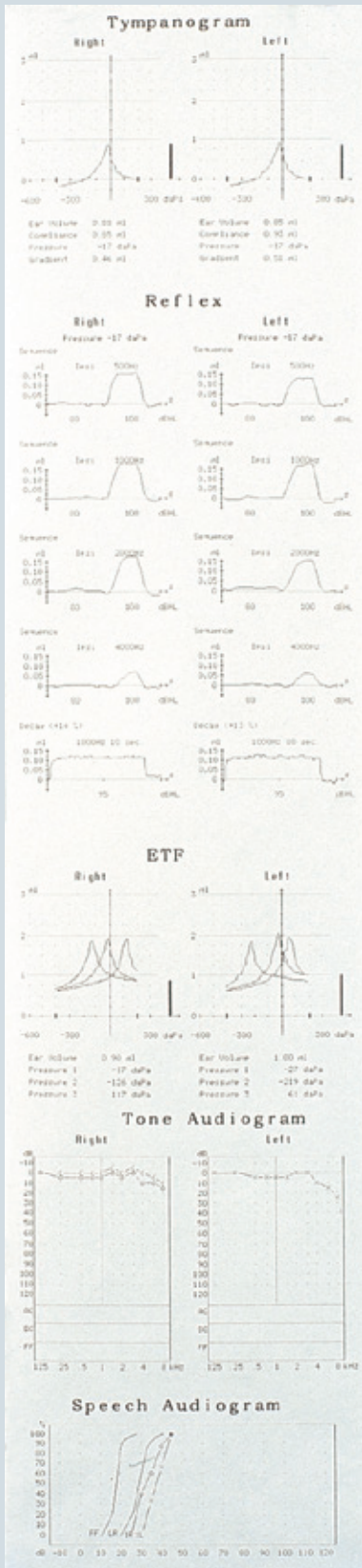
- Simple audiometric data transfer
- Customized report templates
- Customized print templates
- Patient and session handling
- Audiometric symbol editor
- Database integration into NOAH or OtoAccess™

### Tests

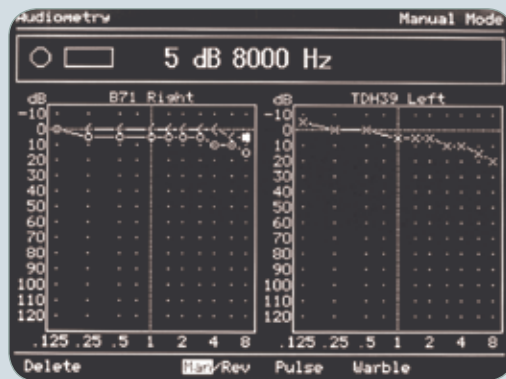
- *Impedance tymp, reflex and ETF (intact)*
- *Audiometry: air, bone and speech*
- *Stenger speech, ABLB, Hughson-Westlake automated threshold and SISI*

### Features

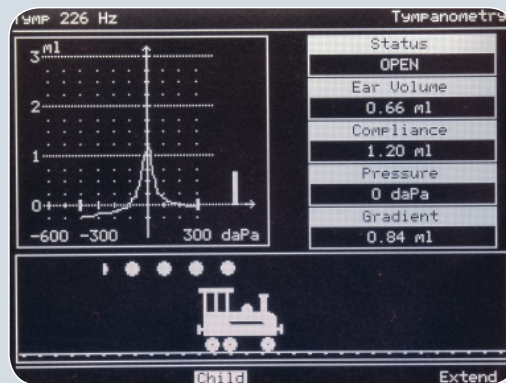
- *Impedance – endless airflow, customizable test sequences, adaptive pump speed, extended pressure range, probe design, ipsi and contra reflexes, test stimuli, manual reflex function, etc.*
- *Audiometry – air, bone and speech plus specific tests mentioned above.*
- *Built-in thermal printer*



Speech testing



Pure tone audiometry



A moving train may help to keep children quiet during testing.

# AA222/AA222h

## Specifications

<b>Probe tone:</b>	Frequency: 226Hz. AA222h also: 678Hz, 800Hz, 1000Hz for traditional IYI-curve tympanometry. Level: 85 db SPL with AGC.
<b>Air pressure:</b>	Control: Automatic. Indicator: Measured value is displayed on the graphical display. Range: -600 to +300 daPa. Safety Limitations: -800 daPa and +600 daPa. Pressure Change Rate: Minimum (50 daPa/s), medium, maximum or automatic with minimum speed at compliance peak. Selectable in the setup. Compliance: Range: 0.1 to 6.0 ml (Ear volume: 0.1 to 8.0 ml).
<b>Function:</b>	Tympanometry: Automatic, where the start and stop pressure can be userprogrammed from the setup menu. AA222h: Auto and manual pump functions.
<b>Eustachian Tube Function:</b>	Eustachian Tube Function: ETF test for use when the eardrum is intact. AA222h: Function tests for use with both intact and perforated eardrums.
<b>Inputs:</b>	AA222 only: CD player or tape recorder. - 1 or 2 channels. External microphone for live speech. Patient response switch.
<b>Output:</b>	Audiometry Bone conduction Contra reflex AA222 only: Free field 1 and 2: Output for external 2 channel power amplifier. Monitor: Monitor earphone disconnects the internal monitor loudspeaker when inserted.
<b>Acoustic Reflex tests:</b>	Automatic reflex: Two independent user selectable protocols. Series of fixed intensities available. Automated intensity search functions available for threshold search and reflex growth indication. Free mixing of Ipsi and Contra. Manual reflex: Manual control of all stimuli. May also be used to redo part of automated test results. Reflex decay: Manual control, with stimulus duration of 10 sec. Ipsi or contralateral stimulation.
<b>Audiometer tests:</b>	Manual Audiometry. Automatic Audiometry: Auto threshold according to ISO 8253-1 (Patient controlled Hughson- Westlake). The threshold is determined by the activation of the patient response. SISI: With automatic scoring calculation (5 dB included for familiarisation). Warble: 5Hz sine, +/- 5% modulation. ABLB: Automatic loudness balance test (Fowler). Stenger: Binaural pure tone. AA222 only: Live voice speech. Prerecorded speech. Binaural speech. Stenger: speech.
<b>Frequencies and intensity ranges:</b>	Ipsilateral: Intensity up to 110dBHL. Frequency: 250, 500, 1000, 2000, 3000, 4000, WB, HP, LP noise Contralateral: Intensity up to 120dBHL. Frequency: 125 to 8000Hz, WB, LP, HP noise Audiometry: Intensity from -10 to 120dBHL. Frequency from 125Hz to 8000Hz
<b>Attenuator:</b>	1dB or 5dB steps.
<b>Memory:</b>	Internal memory for two ears. Each ear: 6 Ipsi and 6 Contra recordings. Each may have up to 6 stimuli. Also, there is memory for additional manual reflex recordings. (Total max. 78 reflexes per ear).

<b>USB:</b>	Input/output for PC connection.	
<b>Printer</b>	Built-in fast thermal printer with recording paper in rolls. Paper width: 112 mm.	
<b>Examples of compatible Windows software:</b>	Interacoustics Database OtoAccess™. Diagnostic Suite for PC-integration (OtoAccess™ and Noah compatible)	
<b>Power supply:</b>	UPS400 (Included) 100-240V.	
<b>Consumption:</b>	15VA, max. 45VA.	
<b>Dimensions/weight:</b>	42 x 32 x 10.2 cm / 16.5 x 12.5 x 4 inches. Weight: 4.1 kg / 9.0 lbs.	
<b>Impedance standard:</b>	EN 60645-5/ANSI S3.39, Type 2.	
<b>Audiometer standard:</b>	EN 60645-1/ANSI S.3.6. Type 2 Tone Audiometer, Speech Type B-E	
<b>Safety standard:</b>	EN 60601-1, Class I, Type B.	
<b>Medical CE-mark:</b>	Yes	
<b>Printer option:</b>	AA222-xp is identical to the AA222 but has no built-in printer. Suitable for installations where computer connection takes care of printing.	
<b>Included parts:</b>	TDH39 Audiometric headset CIR22 Insert earphone for contralateral reflex stimulation or masking or monitoring B71 Bone conductor APS3 Response switch ATP-AT235u Universal probe system with shoulder strap, wrist strap CAT40 Calibration unit, 0.2-0.5-1-2-3-4-5 ml	BET55 Ear tips in box TPR26 3 rolls of recording paper UPS400 External switch mode power supply Power cable 120 or 230 V Pen set Dust cover Operation Manual CD Calibration certificate and warranty card
<b>Included parts clinical version:</b>	EM400 Electret talk back microphone MTH400M Monitor headset w. boom mic. Patch cords	
<b>Included parts portable version:</b>	Soft carrying bag	
<b>Optional Parts:</b>	EARtone 5A Insert phones 50250 Peltor noise enclosures 21925 Amplivox noise enclosures DD45C Single contralateral headset IES-2 Impedance ear simulator GSE10 RS232 Galvanic isolation adapter AFC8 Sound cabin connection panels	AP12 2x12 Watt external power amplifier ALS7 Free field loudspeaker MTH400 Monitor headset OtoAccess™ Database Diagnostic Suite for PC-integration (OtoAccess™ and Noah compatible)

Read more here:  
[www.interacoustics-us.com/us/AA222](http://www.interacoustics-us.com/us/AA222)



**Interacoustics®**

Leading diagnostic solutions

### Interacoustics – the best choice

With over 40 years of experience, Interacoustics is dedicated to supplying its customers with the best possible solutions for their audiologic needs. This is accomplished by maintaining a continuous dialogue with healthcare professionals working in all sectors of audiology. Our equipment meets the highest possible engineering standards and we provide design know-how that can only come from close contact with clinical practice.

### Solutions on every scale

Designing equipment for every size of clinic in so many countries puts us in the unique position of being able to offer solutions that fit your requirements exactly. Audiometry, tympanometry, electrophysiology, hearing aid testing, balance investigation are all within our scope and can be integrated to suit your needs.

### Design for diagnosis

We design equipment to make testing and interpretation easier. This means better interfaces, well designed screen layouts, printed reports and interaction over networks with databases and electronic records systems. In most cases, you can configure the settings and layout yourself.

### Support worldwide

The Interacoustics name is not only your guarantee of quality and functionality, but also for support. We operate in over 100 countries worldwide through a well coordinated network of distributors and service centres to ensure that you receive total support and service.



### Sales and service in your area:

### Interacoustics USA

Phone: 1-800 947 6334 · Fax: 1-952-903-4200  
E-mail: [info@interacoustics-us.com](mailto:info@interacoustics-us.com)  
7625 Golden Triangle Drive, Eden Prairie, MN 55344  
Web: [www.interacoustics-us.com](http://www.interacoustics-us.com)

### Other audiometers:

- PA5 Pediatric Audiometer
- AS608/AS608e Screening Audiometer
- AD226 Diagnostic Audiometer
- AD229e Diagnostic Audiometer
- AC33 Clinical Audiometer
- AC40 Clinical Audiometer
- Equinox<sup>2.0</sup> PC-based Audiometer

### Other middle ear analyzers:

- Titan Middle Ear Analyzer
- AT235 Middle Ear Analyzer
- AT235h Middle Ear Analyzer
- MT10 Handheld Tympanometer



Detachable probe tip



Shoulder and wrist strip for clinical probe system

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Read more here:  
[www.interacoustics-us.com/us/AA222](http://www.interacoustics-us.com/us/AA222)



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