

**AA222 / AA220**  
*Audio Traveller*



*Save time on routine.  
Focus on results.*



**Interacoustics®**

leading diagnostic solutions

# AA222 / AA220

## Audio Traveller

### Middle ear analyzer

The AA222/AA220 is the most comprehensive combination of middle ear analyzer and clinical audiometer 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/AA220 ideal for the new clinic, for travelling to alternate locations, and for clinical situations where space is at a premium.

#### 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/AA220 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.

#### Reflex Tests

Traditional ipsilateral and contralateral reflex tests are standard features. The AA222/AA220 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/AA220 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

#### Decay – Contra and Ipsi

Acoustic reflex decay testing is available with ipsilateral as well as with contralateral stimulation. The AA222/AA220 comes with a standard single TDH39 and a button insert receiver (CIR22) for stimulating the contralateral ear.

#### Probe Systems

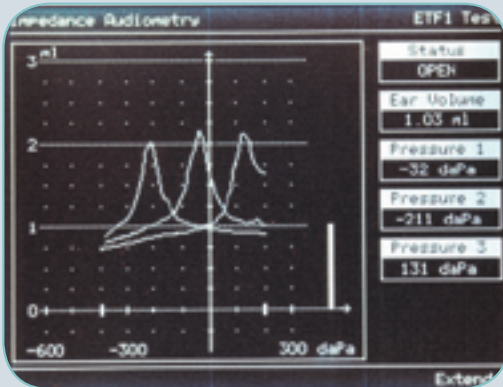
The AA222 is supplied with a combi probe system that is easily interchanged for screening and clinical testing purposes. The screening probe tip is ideal for quick tymps and a screening reflex, while the diagnostic probe provides more stability for more lengthy exams that include tymps, reflexes, reflex decay and ETF. The probe has a button for changing ears remotely from the AA222/AA220 and for starting and pausing the test.



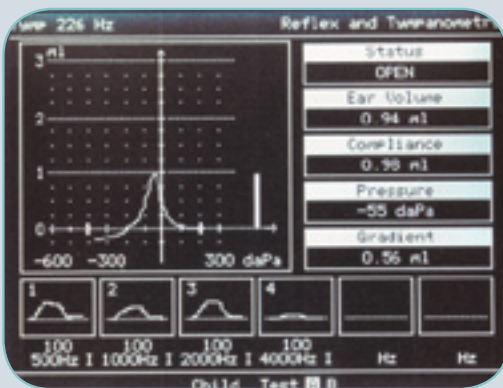
Detachable probe tip



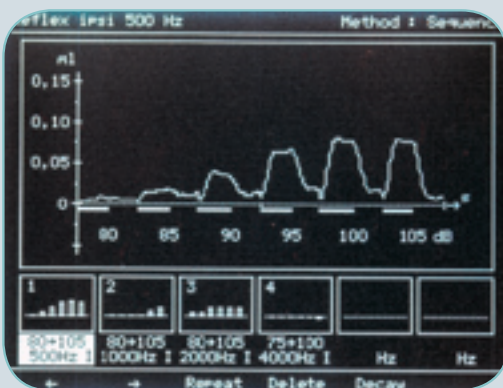
Shoulder and wrist strap for clinical probe system



Automated Eustachian Tube Function test is available.



Tympanogram and reflex test results displayed simultaneously.

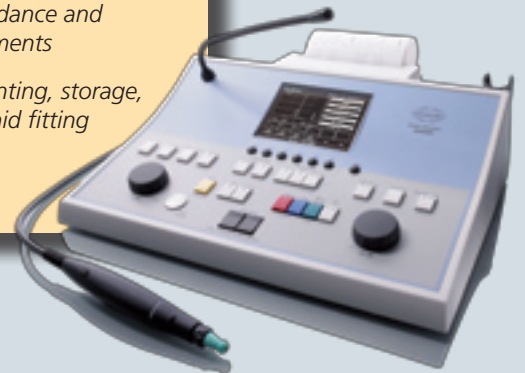


A group of increasing stimuli for reflex testing, clear displays reflex growth with increasing intensity.



### AA222/AA220

- 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



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Leading diagnostic solutions

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## 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.



Speech testing - the AA222 only.



Pure tone audiometry

### Audiometry AA220

The AA220 provides all the capabilities of the AA222 with the exception of Speech and Free Field testing.

### Visual child distraction

The AA222/AA220 has a selection for a moving "choo choo train" on the screen to help keep the child distracted while running tympanometry tests.



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

### Printing options

The AA222/AA220 has a built-in thermal printer that will print all test results.

By connecting an optional PC keyboard, customized clinic details and patient demographics can be generated for all printouts.

### 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/AA220 and all of its accessories.



Optional hard shell carrying case

### Data Storage with Windows® based software

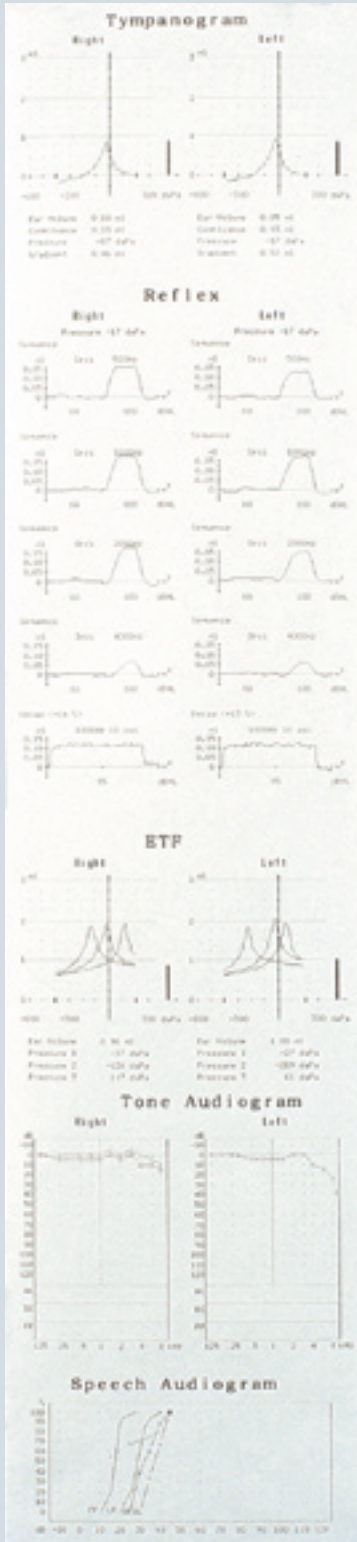
Transferring data to a PC is possible by two different applications. OtoAccess™ is the Interacoustics® database platform that enables data collection from multiple instrument sources into one patient file. Hearing aid information may also be included. NOAH hearing aid fitting software will also integrate the test data when used with the Interacoustics® NOAH impedance module software.

### Tests

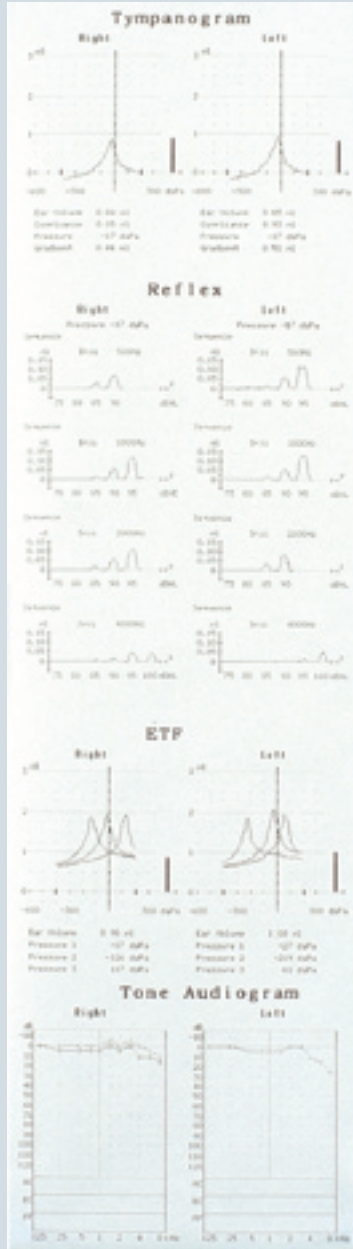
- Impedance *tymp*, reflex and *ETF* (*intact*)
- Audiometry: *air*, bone and speech
- Stenger speech, ABLB, Hughson-Westlake automated threshold and SISI

### 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



Printout from AA222



Printout from AA220

**AA222 compared to AA220**

- Also holds Speech and Free Field testing

# AA222 / AA220

## Specifications

<b>Probe tone:</b>	Frequency: 226Hz. 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>Types:</b>	Tympanometry: Automatic, where the start and stop pressure can be userprogrammed from the setup menu. Eustachian Tube Function: ETF test for use when the eardrum is intact.
<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>Compatible Windows software:</b>	Interacoustics Database OtoAccess™ and Diagnostic Modules software. IA-NOAH-Imp and IA-NOAH-Aud Module for interfacing to NOAH.	
<b>Power supply:</b>	UPS400 (Included) 100-240V.	
<b>Consumption:</b>	15VA, max. 45VA.	
<b>Dimensions/weight:</b>	(LxWxH): 36x26x10 cm / 14x10x4 inches. Weight: 2.8 kg / 6 lbs.	
<b>Impedance standard:</b>	IEC 60645-5/ANSI S3.39, Type 2.	
<b>Audiometer standard:</b>	IEC 60645-1/ANSI S.3.6. AA220: Type 3 Tone Audiometer AA222: Type 2 Tone Audiometer, Speech Type B-E	
<b>Safety standard:</b>	IEC 60601-1, Class I, Type B.	
<b>Medical CE-mark:</b>	Yes	
<b>Printer option:</b>	AA222/AA220-xp is identical to the AA222/AA220 but has no built-in printer. Suitable for installations where computer connection takes care of printing.	
<b>Included parts AA220/AA222:</b>	TDH39 Audiometric headset CIR22 Insert earphone for contralateral reflex stimulation or masking or monitoring B71 Bone conductor APS3 Response button ATP-AT235u Universal probe system with shoulder strap, wrist strap	BET50 Box of 65 assorted eartips TPR26 3 rolls of recording paper UPS400 External switch mode power supply Power cable 120 or 230 V (Please specify) Dust cover Operation Manual CD Multilingual CE manual
<b>Optional parts AA220/AA222:</b>	EARTone 5A Insert phones 50250 Peltor noise enclosures 21925 Amplivox noise enclosures TDH39z Single earphone w. HBZ235u headband for contralateral reflex stimulation ACC25 Carrying case AFC8 Sound Cabin Installation Panel AP12 2x12 W External Power Amplifier ALS7 Free Field Loudspeaker for AP70	CAT40 Calibration unit, 0.2-0.5-2-5 ml IES-2 Impedance ear simulator GSE10 RS232 Galvanic isolation adapter OtoAccess™ and Diagnostic Modules MTH400M Monitor Headset with boom microphone MTH400 Monitor Headset EM400 Electret Talk Back Microphone IA-NOAH-Aud module IA-NOAH-Imp module

**Read more here:**  
[www.interacoustics.com/com/AA220](http://www.interacoustics.com/com/AA220) or [AA222](http://www.interacoustics.com/com/AA222)

### 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.



### Other audiometers:

- PA5 Pediatric Audiometer
- AS608 Screening Audiometer
- AD226 Diagnostic Audiometer
- AD229b Diagnostic Audiometer
- AD229e Diagnostic Audiometer
- AC33 Clinical Audiometer
- AC40 Clinical Audiometer
- Equinox Clinical Audiometer

### Other middle ear analyzers:

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



### Sales and service in your area:

Read more here:  
[www.interacoustics.com/com/AA220](http://www.interacoustics.com/com/AA220) or [AA222](http://www.interacoustics.com/com/AA222)

### Interacoustics A/S

Phone: +45 6371 3555 · Fax: +45 6371 3522  
E-mail: [info@interacoustics.com](mailto:info@interacoustics.com)  
DK-5610 Assens, Denmark  
Web: [www.interacoustics.com](http://www.interacoustics.com)



# Interacoustics®

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