**Affinity<sup>2.0</sup>** *Hearing Aid Fitting* 



### The integrated fitting solution

- Audiometry, REM, HIT, and visual speech mapping



## **Affinity<sup>2.0</sup>** *Hearing Aid Fitting*

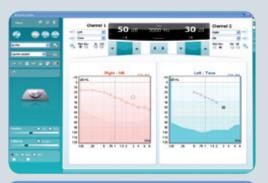
### A complete solution

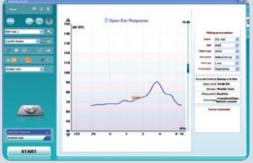
The Affinity<sup>2.0</sup> is a user friendly Hearing Aid Analyzer that interfaces with a full range of integrated audiologic software modules on your laptop or desktop PC. This combination of hardware and software make the Affinity<sup>2.0</sup> the perfect instrument for hearing assessment, hearing aid fitting and patient satisfaction.

#### Modules - your security for the future

- Audiometry (basic & advanced)
- Hearing Aid Testing
- Real Ear Measurements including Visible Speech Mapping

As new hearing aid technologies evolve – so will the Affinity<sup>2.0</sup>. The Affinity<sup>2.0</sup> modules will be upgraded as new stimuli or other advanced techniques become available. All associated patient records are stored in NOAH or through our own database program called OtoAccess™. Both programs are networkable.



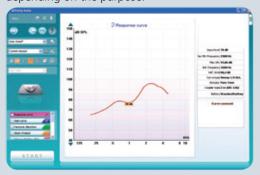


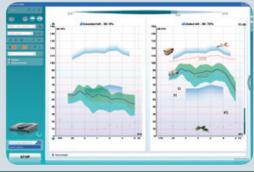
#### A complete package

The Affinity<sup>2.0</sup> has the complete package with modern applications for dispensing and clinical evaluations. From beginning to end, the Affinity provides high quality components with software features that guide you through the process of evaluation, remediation/counseling and professional report generation. Streamlining procedures is made possible with special exporting and importing functions that enable businesses with multiple office locations to standardize protocols and reports. Data management can be shared between offices and integrated into Electronic Medical Records.

#### Printouts and reports - your own designs

Printed reports are user designed through a print wizard and include a complete set of default reports. Data can be imported into the system, a feature used by dispensing chains to distribute standard tests to their stores and by dispensers to download specifications from a manufacturer. Output from Affinity<sup>2,0</sup> is in PDF or XML format depending on the purpose.





The Affinity<sup>2.0</sup> is available with audiometry, real ear measurement, visible speech mapping and hearing aid testing software modules.

#### **Sales and Counseling**

A Visible Speech Mapping module is available with the Affinity<sup>2.0</sup> to assist you in educating the client and family members on the complexities of hearing aid amplification and the benefits they will receive. Client decisions on cost/benefit may hinge on their comfort level during the educational process and Visible Speech Mapping technology will have a positive influence on their total hearing aid selection experience.

#### Personal settings and protocols

The Affinity<sup>2.0</sup> permits personalized test configurations to match your clinical needs. The Affinity<sup>2.0</sup> includes a set of tests that may be modified to quickly get you up and running to your own standards and stored for future use.

These user defined protocols are saved under a unique name for easy recall via a drop down menu. This enables multiple users to make test selections that are suitable for their own applications. Larger clinics or dispensing facilities will find this feature useful as these protocols can be downloaded and transferred to these sites over the internet.

#### Tracking changes

Adding your observations to test results is often valuable when clients make repeat visits or have special needs. In addition, the integrated database allows results from different dates to be displayed together. This saves time when troubleshooting a hearing aid and is important when monitoring the progression of hearing loss in a client. Comparisons can be both onscreen and printed in reports.







## **Affinity<sup>2.0</sup>** *Hardware*

### Design and quality

#### All in one solution

The Affinity<sup>2.0</sup> combines all of the elements of audiometry, HIT, REM and Visible Speech Mapping into an attractive, compact design. Simply mix and match the components to your specific needs and build on the system as your practice grows.

#### Easy access test chamber

The Affinity<sup>2.0</sup> test chamber is ergonomically designed to permit easy access for placement of hearing aids, couplers and other accessories.

#### **High quality parts**

Couplers are engineered of high quality stainless steel to ensure a lifetime of use. A unique 'snap on' coupling ring allows quick and easy interchanges between couplers.

A rear storage compartment helps keep components organized and out of the way.

#### **Dedicated outlets**

Dedicated input and output connections reduce the need for swapping cables at any point in your evaluations. A hinged cabling cover maintains a professional appearance in your office.

#### **Portable**

An optional hard cover case adds portability to Affinity<sup>2,0</sup>'s many functions. Ideal for the dispensers who make home visits or distribute their time among a number of clinics or institutions. The specially designed case carries Affinity<sup>2,0</sup> and all accessories.



Hardcover carrying case.



Easy access built in test chamber

#### Affinity<sup>2.0</sup> Hardware

- All in one solution
- Easy access test chamber
- · High quality parts
- · Dedicated outlets
- Portable

## **Affinity<sup>2.0</sup>** *HIT440*

### Hearing Instrument Testing

The HIT440 provides current ANSI diagnostic measurements for comparison to manufacturer specifications. User defined protocols are easily configured to evaluate specific hearing aid characteristics and performance. A wide range of stimuli including ICRA signals are available to test the newest in non-linear hearing aids.

- **Endless loop testing** for suspected intermittent faults
- Directional microphone testing
- Built-in test sequences
- Compatibility with TBS25 (greater attenuation)
- Historical sessions for comparison
- Report Page
- Customization

#### **Additional features**

- Tests all types of hearing aids
- NOAH compatible
- Variable smoothing of curves
- Telecoil testing
- Manual override
- Import/Export of protocols.
- Wide Range of test stimuli



#### **HIT440**

- Directional microphones
- Customization of setup
- Report page
- Historical session
- Built-in test sequences



## Affinity<sup>2.0</sup> *REM440*

### Real Ear Measurement

Real-Ear Measurement is the only objective analysis available to measure the hearing aid output while the patient is wearing it. The REM440 software is a reliable verification tool that includes a wide range of functions for verifying hearing aids, including the increasingly popular open fit instruments. Now an additional patient centered counselling and verification tool (Visible Speech Mapping) is available.

own protocols. Or you can use specific aid types. This will often save you significant time and is more convenient. User protocols are stored on a drop down menu and run by single click selection.

ries of client (e.g. adults and or children) or differ-

ent clinicians using the Affinity<sup>2.0</sup> can design their

#### Open fit capability

The Calibrate for Open Fit function (substitution method) handles the new trend of open fittings seen in products like Oticon Dual, Phonak Micro Savia and Widex Passion. It provides a wide range of settings and stimuli for testing non-linear hearing instruments.

#### **RECD** and normative data

Thanks to the benefits of universal neonatal hearing screening (UNHS) an increasing number of babies with hearing loss are identified within 6 months of age. As a result more infants and small children are referred for hearing aid fitting in which Real-Ear to Coupler Difference (RECD) is an essential measure. Specially designed components enable a rapid testing of small children whose attention span is very short. In cases where measurement of REUR and RECD is not practical, REM440 provides age related normative data to approximate these values.

#### **Testing advanced features**

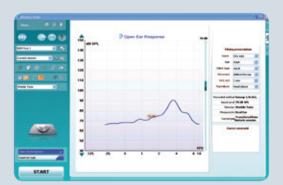
Hearing aid technology has dramatically improved over the past decade. Advanced features and algorithms are common in modern digital hearing aids. The REM440 allows for verifying some of these advanced features such as Directionality and Noise Reduction.

#### **Concurrent operation**

The REM440 can be open at the same time as other fitting applications to enable smooth adjustment and verification of the hearing aid.

#### User protocols and customization of setup

You can design user protocols for different catego-



Twin Headset (both sides with probe and reference microphones.

#### **REM440**

- Open fit capability
- · Visible Speech
- RECD
- Normative data
- Concurrent operation
- Historical session
- Report Page
- Customization of setup
- Open Ear Gain, Real Ear to Coupler and Insertion Gain

### Affinity<sup>2.0</sup> VSP440

# Visible Speech Mapping - Verification, counseling and sales in one!

The Visible Speech Mapping module is designed to assist clinicians in the important process of fitting and counseling. Incorporated in a verification screen the system addresses the task of explaining technical issues to non technical users.

Visible Speech Mapping – a verification tool

Visible Speech Mapping merges real-ear verification and counseling into one screen. You can match the amplification to target (e.g. DSL mi/o v5, NAL-NL1) on an aided display and at the same time show the hearing aid benefit by comparing to an unaided display. The comprehensive layout showing dynamic range, normal hearing thresholds, and sound examples assists you in the process of communicating the measurement results and making recommendations.

#### Visible Speech Mapping – a counseling and sales tool

Realistic expectations are the major psychological factor in use of the hearing aid. Visible Speech Mapping is a practical tool to that end. Explain compression, binaural benefits, and other advanced features in a simple way - also to relatives who are often a motivating factor when people seek hearing assistance. Demonstrate and explain the difference between two different hearing aids in order to help them make their final decision when purchasing instruments.

#### Wave player and external sounds

Stimuli in Affinity<sup>2.0</sup> are not restricted to standard tones and speech. You can add files in WAV format containing any type of noise. You can even record a relatives voice and play it back through the WAV player to find out which of two settings work best. External sounds may be added by using a CD player.

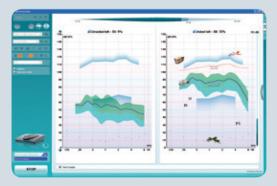
#### Also for children

Visible Speech Mapping can be used in the adult as well as the pediatric hearing aid fitting. Based

on individual or predicted RECD values Visible Speech Mapping can be performed in the 2 cc coupler. This is particularly helpful when fitting hearing aids to children. Parents of children with hearing loss are entering a whole new world with a terminology all of its own. By helping parents to absorb and understand what they need to know, Visible Speech Mapping makes counseling and verification a positive experience.

#### Other features

- Live Demonstration of Amplification
- Verification with NAL-NL1 and DSL v5.0a
- Live Voice and Calibrated Test Signals



#### VSP440

- Combines verification and counseling
- Demonstrate hearing aid benefits
- Encourages binaural fittings
- Family counseling/education
- Promotes sales



## Affinity<sup>2.0</sup> AC440

### Audiometry software

The AC440 software turns the Affinity<sup>2.0</sup> into one of the most powerful diagnostic audiometers available today. Above and beyond the standard air, bone and speech capabilities, there are a wide variety of test applications that make it ideal for the high end clinical environment or for any active dispensing practice. Multiple methods of using the software allow previous experiences with stand alone devices to transfer easily. Historical data retrieval will display overlapping audiograms for diagnostic and educational purposes and even transfers immediately into the REM440 fitting software.

#### Report page

Each test session contains a report page which functions as a holding place for comments. This ensures that vital tester observations are not lost and can also function as a summary page for test results. The report page is saved with the test results and made available whenever the session is recalled.

#### **Full test battery**

The AC440 has a basic set of test for traditional audiometry but also includes a battery of tests suitable for CAPD, differential diagnosis, tinnitus, hearing loss and hearing aid simulations.

#### Sales and counseling

The AC440 can be supplemented with modules for Hearing Loss Simulation (HLS440) or Master Hearing Aid (MHA440). These tools engage clients and relatives in the fitting process. This is especially important in establishing the trust and confidence of first-time users.

#### **Historical sessions**

Any historical audiogram can be retrieved for display while you are performing a test, or after you have completed the examination. It is an invaluable tool when assessing changes over time with your clients and aids in the counseling process.

#### User protocols and customization

User protocols are great time savers. They are collections of settings for a particular test procedure

or clinician. They enable you to save your preferences or standard procedures on a drop down menu from where you can load or run them with a single click. There is no limit to the number of protocols you can save.

#### **Dedicated keyboard**

The AC440 has an optional dedicated audiometric keyboard to aid in the transition from stand alone equipment to PC based. Function keys may be customized to eliminate the cycle of menu driven selections and speed up your test time.

#### Data extraction and output

The modern era of electronic medical records requires methods of data extraction for condensing patient records and sharing information across clinics. The Affinity<sup>2,0</sup> is designed to streamline this process, thereby improving economy, efficiency and speed of data management. Data may be extracted in PDF and XML formats for printouts and email attachments.

#### **High Frequency (HF440)**

The high frequency option on the AC440 software module permits an extended frequency range out to 20KHz which is typically used for ototoxic monitoring. When used with the Multiple Frequency selection it becomes and even more powerful tool for discreet analysis of tinnitus.

#### **Masking Level Difference**

The MLD test is used as part of the CAPD test battery. Low frequency stimuli in combination with NB noise (binaurally) and acoustical phase differences will produce threshold shifts and may help identify persons with auditory binaural integration problems.

#### Speech tests from the hard drive

This feature saves time by eliminating the need for an external CD player for the majority of your speech tests. Choices for scoring methods allow you to customize the word presentations and view the chosen word lists.

#### Other features

- Air, bone and speech
- Free field applications
- Full client communication connections
- Intuitive pre-programmed tests protocols
- Print wizard: design your own reports
- Results sharing: printed pdf, exported xml
- Integrated database. All data in one place means all data is available to you
- Possibility for individual user profiles
- TEN(HL) test for diagnosing dead regions in the cochlea



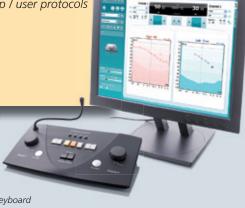


#### AC440

- Full-test battery
- Speech from hard drive
- High Frequency (HF440)
- Masking Level Difference (MLD)
- Session history: compare audiograms

• Customization of setup / user protocols

- Report page
- Dedicated keyboard
- Data extraction



Dedicated audiometer keyboard



# **Affinity<sup>2.0</sup>** *AC440 Specifications*

Standards:	Safety: IEC 60601-1, Class I, Type B, UL 2601-1, CAN/CSA-C22.2 No. 601.1-M90, IEC 60601-1-1. EMC: IEC 60601-1-2.					
Audiometer standards:	Tone: IEC 60645-1/ANSI S3.6 Type 1; Speech: IEC 60645-2/ANSI S3.6 Type A or A-E					
Calibration:	AC: ISO389-1, ISO389-2; BC: ISO389-3.					
Extended range function:	If not activated, the AC output will be limited to 20 dB below maximum output.					
Input:	Tone, Warble Tone, NB, CD1, CD2, Mic1, Mic2, wave files.					
Masking stimulus:	Narrow Band Noise or White Noise or Speech Noise.					
Outputs:	AC Left + Right, BC Left + Right, Insert Phone Left + Right, Insert Masking, FF1 and FF2. (Line/power 2x10W/4 $\Omega$ ).					
Transducers:	TDH39 Audiometric headset, B71 Bone conductor.					
Tone presentation:	Manual or Reverse. Single or multiple pulses.					
Patient signal:	One or two (optional) hand held push button.					
Patient communication:	Talk Forward and Talk Back.					
Storage capacity:	Tone audiogram: dB HL, MCL, UCL, binaural, aided.					
Speech audiogram:	WR1, WR2, WR3, MCL, UCL, aided, unaided, binaural.					
Compatible software:	NOAH 3 compatible office systems, OtoAccess™.					
Maximum hearing levels:	AC(dBHL Hz TDH39 125 90 250 110 500 120 750 120 1000 120 1500 120 2000 120 3000 120 4000 120 8000 110	) AC(dBHL) HDA200 100 110 115 120 120 115 115 115 115 105	AC(dBHL) EARTone5A 95 100 110 120 120 120 120 120 120 120 105 100	BC(dBHL) B71 - 45 65 70 70 70 75 80 80 50	NB(dBHL) TDH39 75 95 110 110 110 110 110 110 110 110	Extern FF (dBHL) 80 95 100 105 105 105 105 110 110 110 105 85



**Included Parts:** Affinity<sup>2.0</sup> Hardware

Affinity<sup>2.0</sup> AC440 CD with speech files

TDH39 Audiometric headset

B71 Bone conductor

APS3 Patient response switch

MTH400 Headset

EM400 Electret Talkback Mic

EARTONE 3A inserts (sub. 5A's upon request)

Talk back microphone Standard USB cable Power Cable 120 or 230V

Patch cords Warranty card Calibration certificate Operation manual

**Optional Parts:** Audiometer keyboard with live voice mic.

EarTone5A audiometric headset EMS400 Talk back Microphone ACC60 Affinity carrying case CIR22 Insert masking earphones UCO15 Optical USB Extension Cable

Included tests: Masking Level Difference (MLD440)

Multi Frequency Module (MF440), Speech from Hard-drive (SFH440),

Weber Test SISI test (SISI440)

Master Hearing Aid (MHA440), Hearing Loss Simulator (HLS440)

TEN(HL) test for diagnosing dead regions in the cochlea

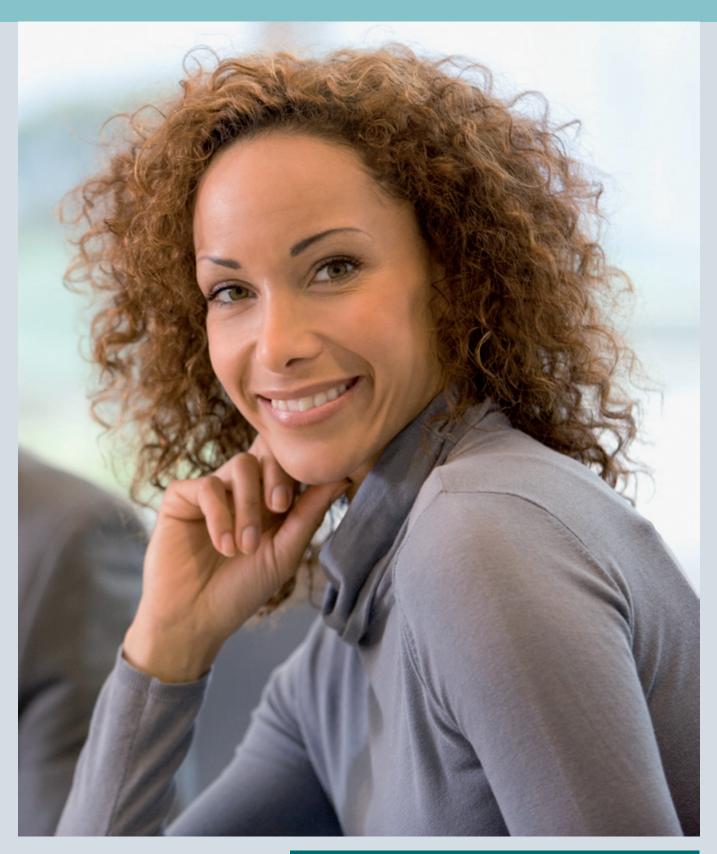
Optional tests: High Frequency audiometry (HF440)



## **Affinity<sup>2.0</sup>** *REM440 Specifications*

EN 61669, ISO 12124, ANSI S3.46. Real Ear Measurement: Frequency Range: 100-10000Hz. Frequency distortion: 2% Frequency Accuracy: ± 1%. Intensity range: 40 - 90 dB ± 1.5 % dB Intensity accuracy: Frequency Resolution: 1/3, 1/6, 1/12 and 1/24 octave or 1024 point FFT. Sweep Speed: 1.5 - 12 sec. Stimulus Signal: Warble Tone, Pure Tone, Random noise, Pseudo random noise, Band limited white noise, Chirp, ICRA, Real Speech, any other sound file (automatic calibration available). Probe microphone 40-145 dB SPL  $\pm$  2 dB. Reference microphone: Intensity: 40 – 100 Measurement Intensity Range: PreProgrammed REM440 module comes with a set of Test Protocols loaded. Additional Test Protocols **Protocols:** can be designed by user, or easily imported into the system. Compatible Software: NOAH 3, OtoAccess™. REUR - REIG- RECD - REAR - REAG - REOG - REUG - Input - Output Available Tests: Affinity<sup>2.0</sup> REM440 CD **Included Parts:** IHM60 In-situ headset with probe microphone and reference microphone (double) IGT50 Insertion gain tubes 36 pcs. SPL60 Transducer Kit for RECD measurement incl. probes and eartips BET60 Box with Eartips for for RECD measurement. Standard USB cable Power cable 120 or 230V Operation manual **Optional Parts:** Calibration adaptor for insitu reference VSP440 Visible Speech Mapping Module







# **Affinity<sup>2.0</sup>** *HIT440 Specifications*

Hearing Aid Analyzer:	EN 60118-0, EN 60118-7, ANSI S3.22.			
Frequency Range:	100-10000Hz.			
Frequency Resolution:	1/3, 1/6, 1/12 and 1/24 octave or 1024 point FFT.			
Frequency Accuracy:	± 1%.			
Sweep Speed:	1.5 - 12 sec.			
Stimulus Signal:	Warble Tone, Pure Tone, Random noise, Pseudo random noise, Band limited white noise, Chirp, ICRA, Real Speech, any other sound file (automatic calibration available).			
Stimulation Intensity Range:	40-100 dB SPL in 1 dB steps.			
Intensity accuracy:	± 1.5 % dB			
Stimulus Distortion:	Less than 1 % THD.			
Coupler Microphone Ranges:	40-145dB.			
FF Loudspeaker Output:	Max 6 W into 8ohms, max 10 W into 4 ohms.			
Telecoil drive in Test box:	10 – 100 mA/meter.			
Battery Simulator:	Standard types are selectable, Custom types within $1.1 - 1.6 \text{ V}$ , $0 - 25 \text{ Ohm range}$ .			
Test box:	Built-in test box holds telecoil drive as well as special dual speaker set for checking directional microphone function.			
PreProgrammed Protocols:	HIT module comes with a set of Test Protocols loaded. Additional Test Protocols can be designed by user, or easily imported into the system.			
Compatible Software:	NOAH 3, OtoAccess™.			
Available Tests:	IEC118, ANSI 3.22, Custom - OSPL90 - Full On Gain - Input/Output - Attack/Recovery Time - Reference Test Gain - Frequency Response - Equivalent Input Noise - Harmonic Distortion - Intermodulation Distortion - Battery Current Drain/Battery Life Time - Microphone Directionality - Coil Frequency Response - Coil Harmonic Distortion - Coil Full-On Gain Response			
Included Parts:	Affinity <sup>2.0</sup> HIT440 CD 2CC coupler with microphone and adaptors for ITE, BTE and Body Style HA Battery Adapters BAA675, BAA13, BAA312, BAA10, BAA5 Coupler seal wax Reference Microphone Standard USB Cable Power Cable 120 or 230V Operation Manual			
Optional Parts:	Couplers 1.2CC and 0.6CC: ITE, BTE, Body Ear Simulator TBS25M External Test Chamber incl. cables. ACC60 Affinity carrying Case Calibration Adaptor			

## **Affinity<sup>2.0</sup>** *Hardware*

Safety Standards:	EN 60601-1, Class I, Type B, UL 2601-1, CAN/CSA-C22.2 No. 601.1-M90, EN 60601-1-1. EMC: EN 60601-1-2.
Medical CE-mark:	The CE-mark indicates that Interacoustics A/S meets the requirements of the Annex II of the Medical Device Directive 93/42/EEC. Approval of the quality system is made by TÜV – identification no. 0123.
Computer Communication:	Built-in USB1.1 computer interface. Optical isolation available.
PC Minimum Requirements:	General: 1.2 GHz Pentium 4 class CPU (or better) with at least 512 MB ram, DVD drive, USB connector.  Display: minimum resolution of 1024x768 with hardware accelerated DirectX/Direct3D graphics card.  Disk Space: At least 1GB available space Processor/clock speed: 800 MHz Pentium 3 or better Operating System: 98 SE/2000/ XP/ME.
Construction:	Painted metal cabinet bottom and moulded plastic top.
Weight:	5.5 kg / 12.1 lbs.
Dimensions:	(WxDxH): 42x38x15 cm / 16.5x15x5.5 inches





#### 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.



#### Products in this group:

- Affinity<sup>2.0</sup> hardware
- HIT440 Hearing Instrument Testing module
- REM440 Real Ear Measurement module
- AC440 Audiometry module
- VSP440 Visible Speech Mapping and Counselling module

#### **Related products:**

TBS25 External Test Chamber



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#### Sales and service in your area:

