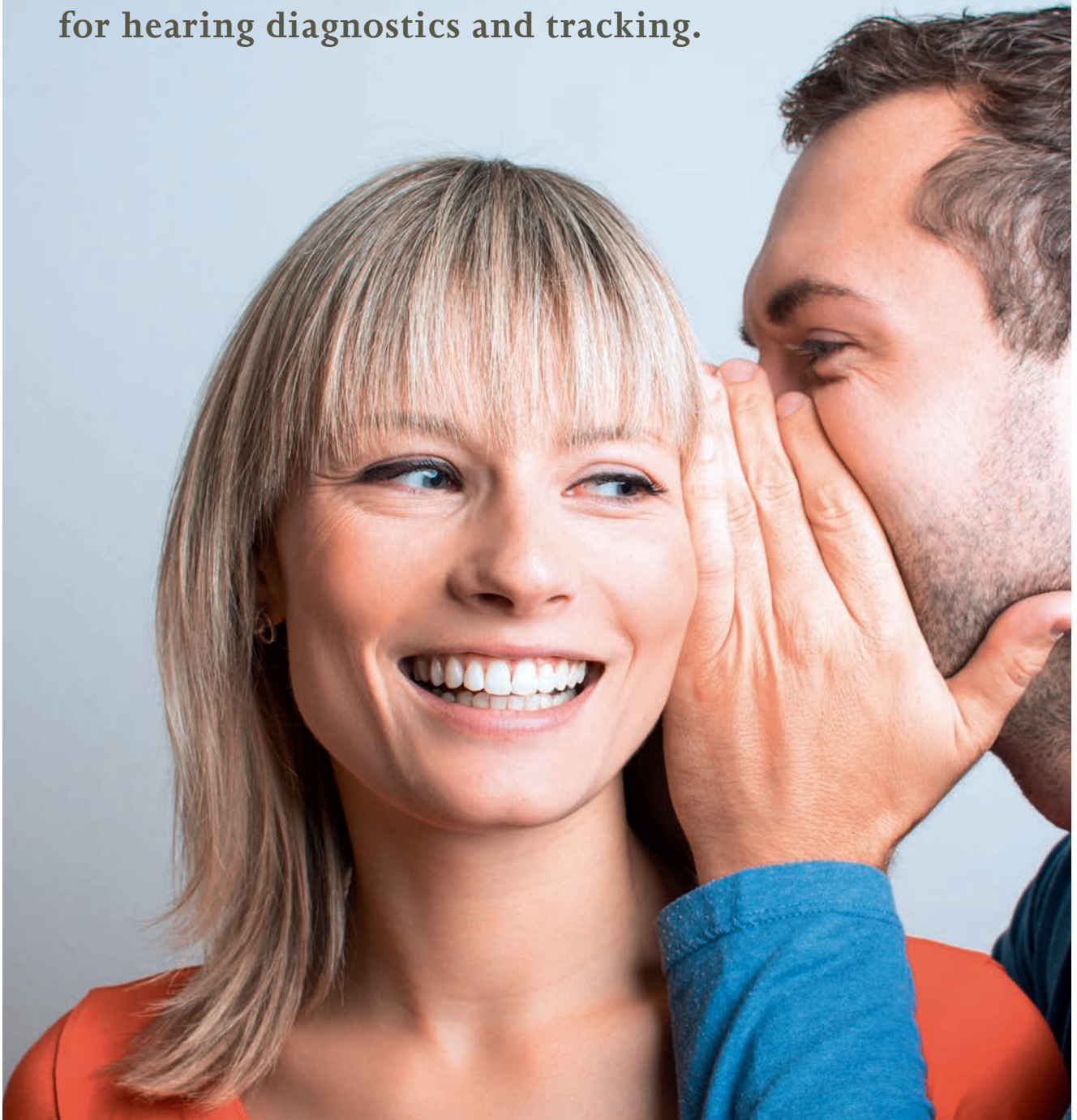


WE CARE ABOUT YOUR HEARING.

Innovative solutions
for hearing diagnostics and tracking.



THE SOUND OF SCIENCE.





**Excellent hearing captures every sound.
Excellent technology captures silence.**

Technologies that make an impact.

The ability to hear is one of our most precious senses. For us at PATH MEDICAL, it is also the most fascinating. From our early years, hearing as a way of perceiving the world has a profound effect on the development of speech and our ability to learn. In old age, it influences the way our memory works. Many types of hearing impairment can be cured or treated with early detection.

PATH MEDICAL develops innovative solutions, which make audiological diagnoses simple for all age and risk groups. With these solutions, pathophysiological issues, which could later only be treated partially or with difficulty, can be prevented at an early stage.

Since 2007, PATH MEDICAL's highly qualified team of experts comprised of experienced scientists and young researchers has been developing new methods and technologies to evaluate the functionality of hearing in its different stages. The use of the most advanced measurement methods enables a reliable diagnosis of hearing impairment. These methods include tympanometry, otoacoustic emissions, auditory evoked potentials, pure tone audiometry, speech intelligibility tests, hearing screening and audiological tests for occupational medicine. In addition, PATH MEDICAL's pathTrack software ensures reliable follow-up for all newborns in hearing screening programs worldwide.

Today, PATH MEDICAL is rated as one of the leading innovators in the market for audiological solutions – with science made in Germany.

Dr.-Ing. Hans Oswald

Dr.-Ing. Andre Lodwig

Great innovations in a compact format.

SENTIERO

SENTIERO combines physiological test methods with psychoacoustical test methods: tone and speech audiometry, TEOAE, DPOAE, evoked potentials (including ABR, ASSR, ECoChG, eABR and VEMP) and tympanometry, which makes it particularly suited for newborn hearing screening (NHS) conformational diagnostics, neurological diagnostics and objective threshold estimation. This allows the user to have flexibility according to patient needs.

SENTIERO is simple to operate with an optimized multilingual user interface. Menu guided navigation and flexible protocols guarantee minimum test time!

Even the desktop version maintains SENTIERO's portability, while combining standard test modules in a single device.



nanoTymp

nanoTymp is the first PC based screening tympanometer, with software that is compatible to most operating systems, providing tried and trusted results in a cost effective manner.

From pediatric to adult patients, the nanoTymp is an invaluable tool for the verification and diagnosis of middle ear pathologies.

SENTI

SENTI features all psychoacoustical tests and was developed with easy to understand illustrations for auditory screening of pre-school children aged from 2 to 5. The SENTI DESKTOP, as a diagnostic audiometer, enables further investigations of auditory processing disorders in children and adults as well as speech in noise screening and diagnostic and image based speech tests.

SENTIERO combines physiological test methods with psychoacoustical test methods

Leadership in newborn hearing screening and tracking



QSCREEN

PATH MEDICAL has precisely developed QSCREEN to fit your essential needs in newborn hearing screening with efficiency, accuracy and reliability.

QSCREEN is the ultimate design and performance in ABR & OAE hearing screening, as a result of over 20 years of experience, having tested millions of newborns all around the world.

QSCREEN with its new slim noise-cancelling OAE probe, capacitive touch screen, computerized docking station, wireless connectivity, flexible and customizable QLINK software, is the latest state-of-the art OAE/ABR screener available on the market today.

PATHTRACK

How do you find and follow up 3,000 out of 1,000,000 newborns to start therapy within 6 months?

PATH MEDICAL offers a long term, reliable and effective tracking system for pre-school and newborn hearing screening. PATHTRACK system enables quality-controlled screening and follow-up, and delivers evidence-based data for the evaluation of the program's effectiveness.

In regions with limited access to health experts, PATHTRACK offers a complete solution for telemedicine procedures and allows analysis of all recorded statistical data. Benchmarking and evidence-based medicine is no longer a dream!

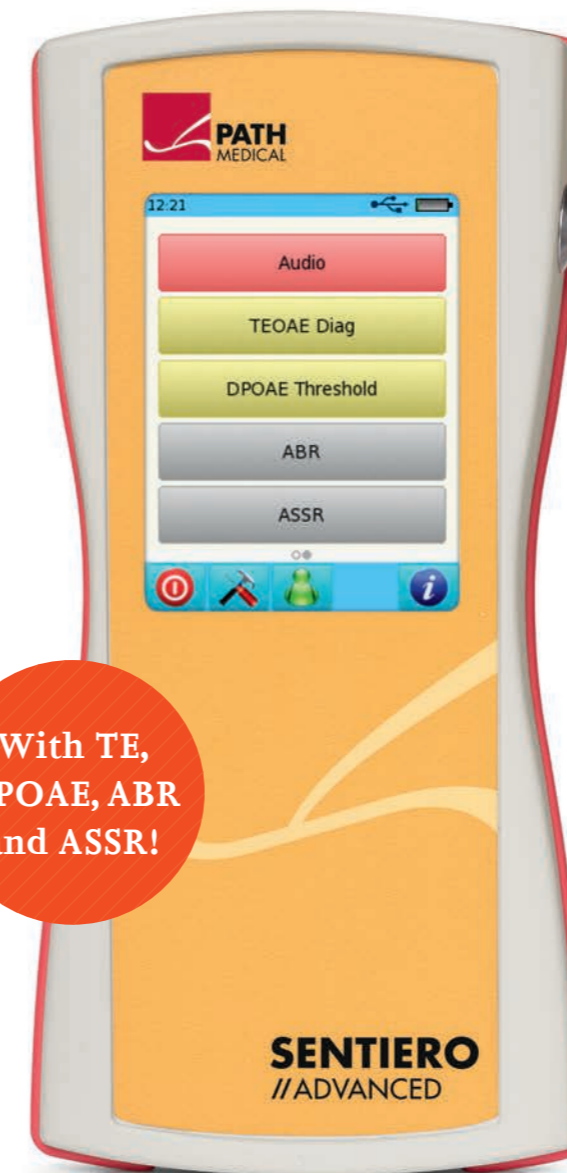
Benchmarking and evidence-based medicine is no longer a dream!

PATH MEDICAL solutions

Our product portfolio offers a wide range of configurations that can meet any need – for audiology and ENT medicine as well as school-age screenings, GPs, newborn diagnostic and EP/OAE.

<p>ABR / ASSR</p>  <p>SENTIERO // ADVANCED</p>	<p>OAE</p>  <p>SENTIERO // SCREENING</p>
<p>Tympanometry</p>  <p>SENTIERO // TYMP DIAGNOSTIC</p> <p>nanoTympt</p>	<p>Audiometry</p>  <p>SENTI // DESKTOP FLEX</p>
<p>OAE & ABR SCREENING</p>  <p>QSCREEN</p>	<p>Tracking & Telemedicine</p>  <p>PATHTRACK</p>

The all in one instrument for OAE, ABR, ASSR and Audiometry



For the first time a hand-held, portable lightweight device combines Tone and Speech Audiometry, TEOAE, DPOAE, AEP (ABR, ASSR, ECoChG, VEMP and eABR) and Tympanometry in a selectable modular format.

The emphasis is on test flexibility, ease of use, reliable diagnostics and screening with minimum test time.

The binaural diagnostic test modules are typically used for NHS conformational diagnostics, neurological diagnostics and objective threshold assessment.

Product Benefits

- Easy to use color touchscreen
- Remote control for hybrid operation mode – from the device touchscreen or from the PC
- Portable
- Mains or battery operated with long battery life (10 hours), fully charges in 4 hours
- Large memory (stores over 1000 tests)
- Screening and diagnostic capabilities
- Extremely fast due to cutting edge technology and patented methods
- Objective and subjective testing in one device
- Customizable to provide a choice of one module or several test modules
- Demo mode provides full access to time-limited modules free of charge
- The option to combine ASSR and DPOAE hearing threshold estimation allows the acquisition of full audiogram from 125Hz to 8kHz in an objective and fully automated procedure!
- Seamless integration with NOAH suite

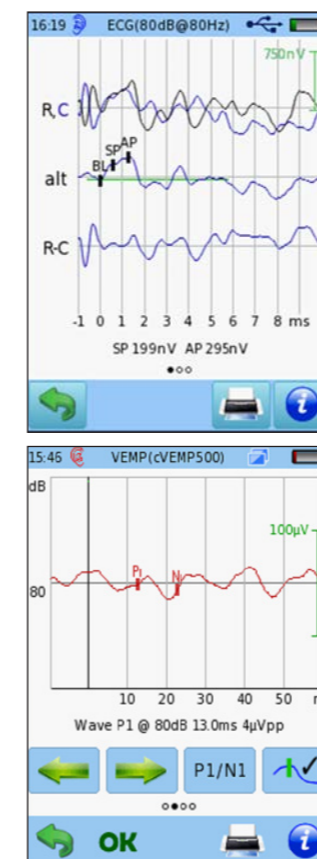
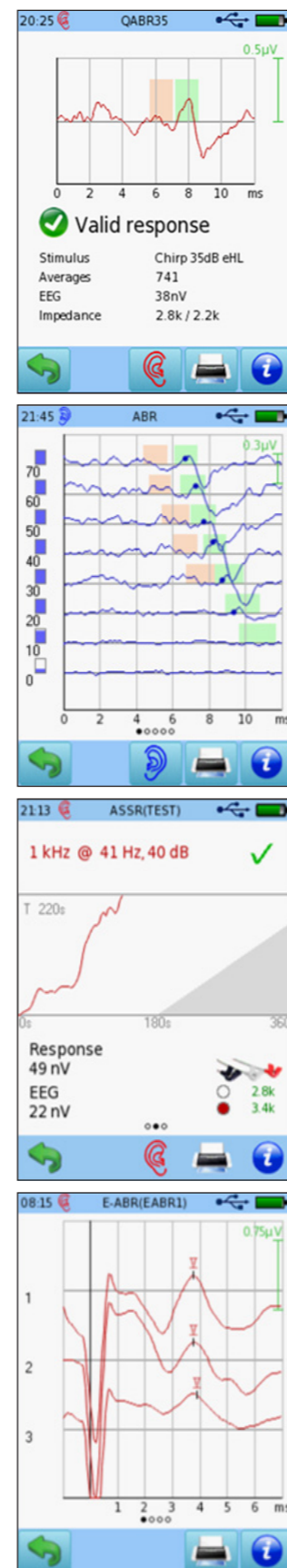
The complete solution
for your audiology clinic!

ABR/ASSR Technical Data

- Binaural ABR, click, chirp and frequency specific tone bursts; rate mode
- Polarity: condensation, rarefaction, alternating, C/R separate traces
- User selectable stimulus type and levels up to 120dB peSPL
- Up to 8 stimulus levels/waveforms per test sequence
- Stimulus rate: 10Hz to 90Hz
- Spread spectrum technology provides faster and more reliable results
- Recording window: 0 to 30 ms
- Recording bandwidth: ABR recording bandwidth: 80Hz to 2kHz; ASSR; 15Hz to 2kHz
- Sampling rate: 16kHz
- Screening ABR module includes chirp stimulus with levels from 25 to 55dB eHL
- ASSR: modulation frequencies: 40 and 80Hz, multi-rate modulation, stimulus levels: up to 100dB HL, up to 4 simultaneous test frequencies per ear – adjustable maximum averaging time, artefact threshold and significance level.
- Superior performance due to weighted averaging algorithm for different environmental settings
- Robust operation mode, automated digital filter 50/60Hz
- Straightforward waveform analysis using automated peak markers
- Additional analysis options after recording and after data transfer from instrument to MIRA PC software

eABR Technical Data

- TTL level trigger input from CI fitting system
- 20µs trigger resolution
- 10 – 100Hz trigger rate
- Recording bandwidth 10Hz to 2kHz
- Up to 15 traces per test
- Auto-trace-switch on trigger pause
- Optional trace smoothing
- Configurable plot scales



Screening and diagnostic Tympanometry can be added to Sentiero Advanced with the TY-MA

ECoG Technical Data

- Display of alternating, condensation, rarefaction traces
- Click and configurable tone bursts
- 8 to 100Hz stimulus rate
- Recording bandwidth 10Hz to 2 kHz
- Intuitive wave editing and evaluation
- Insert phones and headphone support
- Fast weighted averaging
- Optional SpreadSpectrum (SP²)

VEMP Technical Data

- cVEMP and oVEMP
- Stimulation via air conduction and via bone conduction
- EMG monitoring
- 5 presets preconfigured for cVEMP and oVEMP
- Click, Chirp and Tone burst stimuli
- Configurable tone bursts: frequencies from 500Hz to 4kHz; linear or blackman window; different duration for onset, plateau and offset
- Polarity: Condensation, rarefaction, alternating, randomized; option to invert right ear trace polarity
- Stimulus level: 20 – 95dBHL, step 5 dB
- Stimulus rate: 2 – 10Hz, resolution 0.1Hz
- Averages: 20 – 500. Plot range up to 100m/s
- Free text labeling of traces
- Auto EMG scaling and amplitude calculation in PC-Software
- Compare any left and right ear measurement side-by-side in PC software

OAE details: see pages 10 and 11
 Tympanometry details: see page 12
 Audiometry details: see page 14
 For further information visit our website: www.pathme.de

For the hearing diagnostics of pre-terms, risk babies or newborns it is essential to make use of all possible diagnostic options while having the comfort and simplicity of a handheld device.

Recent epidemiological studies show a significant increase of hearing impairment in children. Speech and language acquisition delay is one of the most common neuro-development difficulties in early childhood.

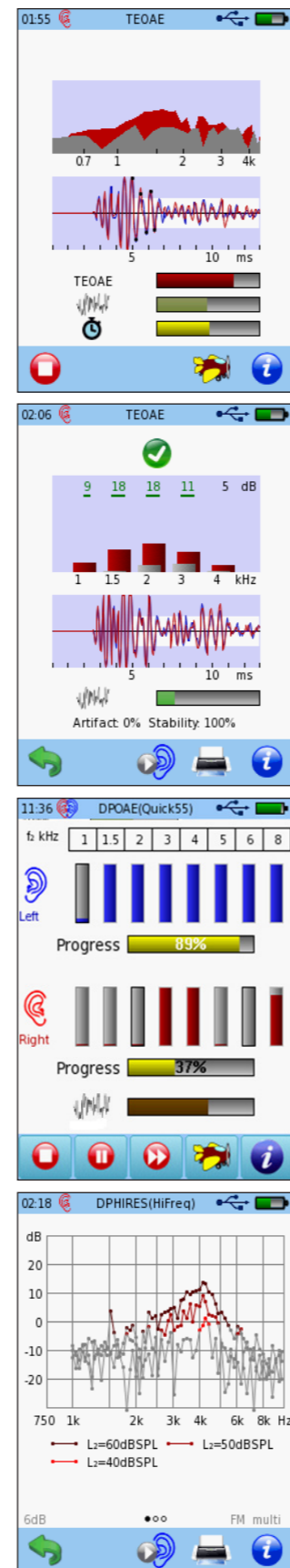
Early detection of hearing disorders is crucial for early treatment. Pre-school hearing tests are designed to provide more frequency specific and quantitative information on hearing loss.

Otoacoustic Emissions Technical Data

- OAE can be measured in both ears simultaneously
- DPOAE Quick/Diagnostic Test modes
- Frequency range: 800Hz to 10kHz, up to 30 points per octave high resolution.
- Time saving multi-frequency stimulation and FMDPOAE™ (Frequency Modulated DPOAE)
- DPOAE Hearing Threshold Estimation (patented) – automated cochlear audiogram up to 50dB HL.
- Stimulus levels from 15 dB HL to 65 dB HL
- TEOAE Quick/Diagnostic Test modes: 0.7 to 4kHz.
- Quick/Diagnostic test with half octave bands with multiple SNR settings and stop criteria



Cartoon mode for pediatric testing



The fastest and most reliable OAE and pure tone Audiometry screening combination



The SENTIERO screener provides efficient and simple testing for all ages from newborns to adults with an intuitive touch screen and its unique time-saving multi-frequency (two frequencies simultaneously) testing technology. The patented FMDPOAE™ provides improved signal amplitude for fast and robust results.

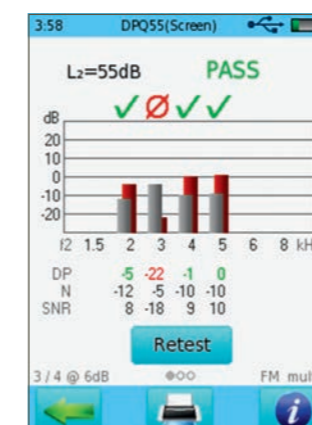
Screening Otoacoustic Emissions Technical Data

TEOAE

- Stimulus level: 85 dB peSPL
- Frequency range: 0.7 to 4kHz
- Artifact rejection: weighted averaging
- Sample rate: 48 kHz (stimulus), 16 kHz (response)
- Window of analysis: 5 to 13 ms post-stimulus
- Stimulation protocol: nonlinear

DPOAE

- Frequencies f2: 1, 1.5, 2, 3, 4, 5, 6, 8 kHz
- Stimulus level L2: 30 to 65 dB SPL; step size: 5 dB
- L2/L1 relation: automatic (scissor paradigm: $L1 = 0.4 L2 + 39 \text{ dB SPL}$, Kummer et al. 1998)
- SNR stop criterion: 6, 9, 12 dB
- Overall stop criterion: x out of y (with y = number of selected frequencies, $x = y/y-1/y-2$ and $x > y/2$) with "as fast as possible" option, i.e. stop as soon as overall criterion is fulfilled or cannot be fulfilled anymore
- Maximum number of recalibrations until stop: 0, 1, 3, 10
- Manual retest



For further information visit our website: www.pathme.de

The world's first all-in-one instrument for OAE, Tympanometry and Audiometry

SENTIERO DESKTOP is a powerful, multi-functional clinical instrument for middle ear assessment (IMP), Otoacoustic Emissions (DPOAE and TEOAE), Pure Tone and Speech Audiometry.

Utilizing multi-frequency Tympanometry, SENTIERO DESKTOP provides improved sensitivity and specificity to middle ear pathologies as well as the ability to perform eSRT testing.

Tympanometry and Acoustic Reflexes Technical Data

- Multi-frequency tympanometry with 3-D graphs
- Frequencies: 226Hz, 678Hz, 800Hz and 1000Hz.
- Level: 69dB HL
- Configurable diagnostic and screening protocols
- Pressure range: -600 to +400 daPa (-300 to +200 daPa for class 2)
- Pressure change rate: 50, 100, 150, 200 daPa/s, as fast as possible
- Range: 0.1 to 8.0ml at 226Hz probe tone and 0.1 to 15mmho at 678, 800 and 1000Hz probe tone
- Y, B, G components display
- ETF tests: non perforated and perforated eardrum, patulous Eustachian tube
- Multi-frequency acoustic reflexes
- Acoustic Reflex Tone – Ipsi/Contra: 500, 1000, 2000, 3000, 4000 Hz, Noise (LP, HP, BB)
- Automatic reflex threshold and reflex decay testing

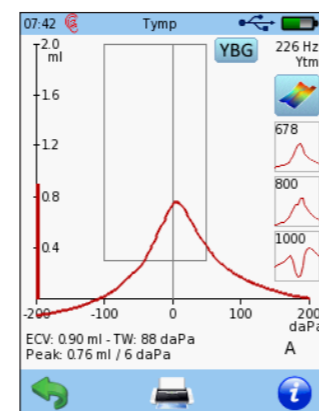
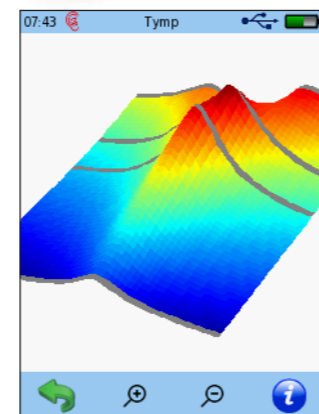
OAE details: see pages 10 and 11

Audiometry details: see page 14

For further information visit our website: www.pathme.de



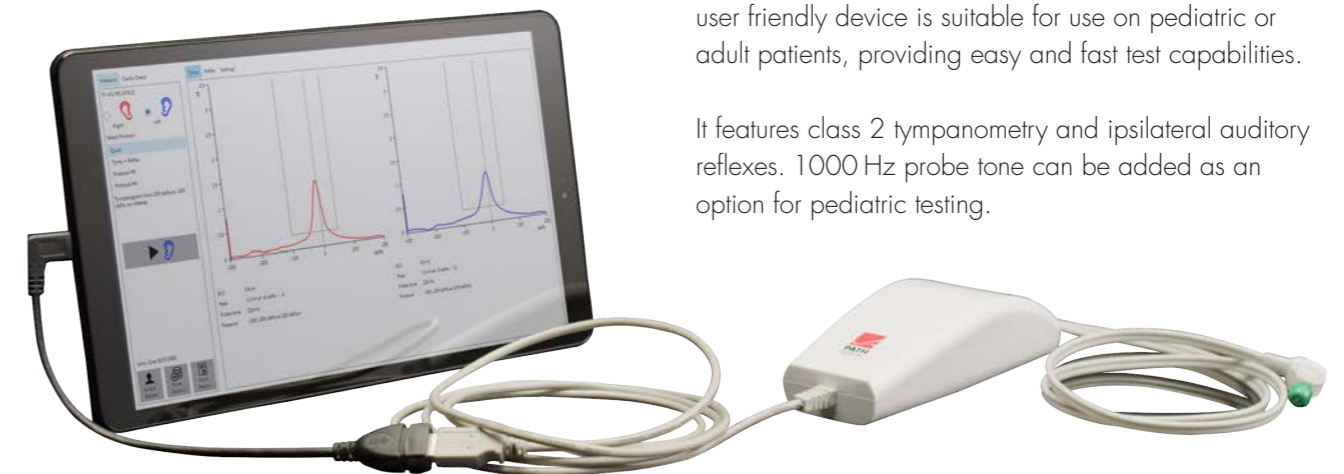
Class 1: diagnostic



Tympanometry simplified For Windows, Android, MAC

The nanoTym is the smallest, most versatile USB driven screening tympanometer in the world. This cost efficient, user friendly device is suitable for use on pediatric or adult patients, providing easy and fast test capabilities.

It features class 2 tympanometry and ipsilateral auditory reflexes. 1000 Hz probe tone can be added as an option for pediatric testing.



Standard Features

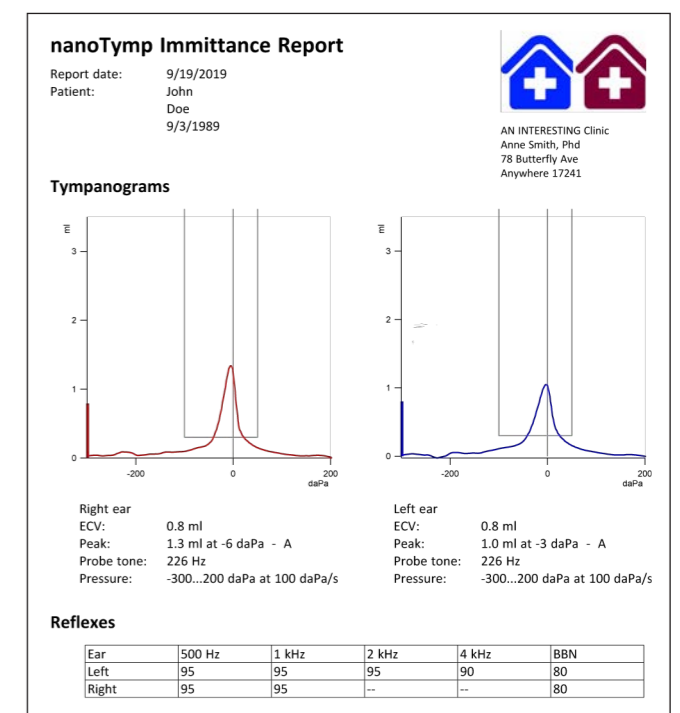
- Extra long probe cable
- 226Hz probe tone
- IPSI reflex frequencies 500Hz, 1 kHz, 2 kHz, 4 kHz, BBN
- Customisable protocols
- NOAH module
- Unlimited data storage (PC dependent)

Optional Features

- 1000Hz probe tone

What is included?

- Lanyard for hands free testing
- User manual
- Probe clip
- Calibration cavities
- nanoTym PC software on USB stick
- Ear tip kit with probe tips



Pure Tone and Speech Audiometry, conventional and image based in ONE instrument

The SENTI DESKTOP FLEX is a portable, battery driven stand-alone audiometer. It offers an easy-to-use colour touch screen, NOAH compatibility and perfect EMR integration.

At only 0.5 kg it has storage for 1000 test measurements and offers direct printing to PDF on the PC, or to a choice of 2 label printers.



Upgrades

MAGIC - MATCH - SUN - BASD - SPEECH TESTS - HIGH FREQUENCY



Product Features

- Large and user friendly 5" colour touch display
- Stable desktop housing
- USB interface to PC
- Built-in memory for custom speech tests
- Multiple language support
- On-board help and information available on the device
- Talk forward/live speech test with optional goose neck microphone
- Database to store up to 1000 test results
- Direct printing to label printer or pdf
- Upgrade at any time!

Test Modules

- Frequencies from 125Hz up to 16kHz (HDA 300 option)
- Levels from -10 to 110dB HL in 5dB steps
- Multiple options for accessories: DD45, HDA300, B81, free field, insert earphones, patient response switch
- Bone and air conduction with masking
- Automated pure tone audiometry
- Screening audiometry and diagnostic audiometry
- Air - bone - masking
- Child audiometry options (MAGIC, MATCH, BASD, spondees and many more)

Technical Specifications

	Model 100470-5C	Model 100470
Hearing level range (AC)	-10 to 110dB in 5dB steps	-10 to 110dB in 5dB steps
Hearing level range (BC)	X	B71 up to 60dB, B81 up to 80dB
Tone stimulus	Sine, Pulsed Sine, Warble Tone	Sine, Pulsed Sine, Warble Tone
Frequency range	125 to 8,000Hz	125 to 8,000 Hz
Air & Bone conduction	Air conduction only	Air & Bone conduction up to 16Khz with HF module
High frequency option	X	1/3 octave noise
Masking noise	X	Békésy & Hughson-Westlake
Automatic testing	X	Available on expert mode
Uncomfortable level	X	Available on expert mode
Bilateral audiogram	X	
Display	240 x 320 pixel; colour 5" LCD	240 x 320 pixel; colour 5" LCD
Memory Capacity	up to 1000 test records	up to 1000 test records
Device dimensions	150 x 210 x 45mm	150 x 210 x 45mm
Device weight	475g	475g
Power consumption	2W	2W
Standards	DIN EN 60645-1	DIN EN 60645-1

The ultimate design and performance in ABR & OAE hearing screening



QSCREEN is the ultimate design and performance in ABR & OAE hearing screening, as a result of over 20 years of experience, having tested millions of newborns all around the world.

Product Benefits

- New slim noise cancelling OAE probe
- Capacitive touch screen
- Computerized docking station
- Integrated Bar Code Reader
- Flexible and customizable QLINK software
- Wireless printing and charging
- Wireless modem connection to pathTrack
- Wireless Bluetooth data transmission to docking station

Versatile screening OAE Profile

- TEOAE screening & DPOAE screening
- Fastest DPOAE device with Multi-frequency DPOAE screening, doubles the speed of conventional DPOAE testing with no loss of accuracy.
- Frequency-modulated DPOAE (FMDPOAE)® PATH patented technology, reducing 'fine structure' effects which leads to potentially fewer referrals and smoother DPOAE response.

New Slim Noise Cancellation OAE Probe



Non sedated screening ABR

- Suits the needs of fast and reliable automated ABR recordings.
- ABR provides flexible configurations that are customisable to your NHS program regional protocols.
- ABR screening test with a choice of transducers: probe, ear couplers and insert earphones

Intelligent solutions for tracking and telemedicine



pathTrack is a specialized, ready-to-use solution using software designed to optimise management of your screening program. Incorporating wireless 3G technology provides bi-directional data transmission between instruments and the central server.

The whole setup can be used in any location with no need to change any hospital IT settings. This enables a quality controlled tracking system to help manage NHS programs and reduce loss to follow up. All data is transmitted with SSL encryption, offering the very highest level of security.

Preschool Screening

Newborn Hearing Screening

Telemedicine

pathTrack Tracking Software

Smart solution with bi-directional data transfer

Product Benefits

- No conflicts with the local IT network and the hospital information system
- Ready to use and maintenance free
- Replacement units will immediately receive all existing settings
- Direct and encrypted connection between the instrument and receiver server
- No subsystems for transmission is needed, local storage in Mira PC software is possible
- Firmware updates and settings changes are performed automatically (no travel expenses)
- Simple update by changes for examiner data
- Site and facility management
- Loan-device management for annual service and maintenance (information by the tracking center for service interval)
- Delivery receipt by the remote station
- Displaying of connectivity and signal strength
- Transmission duration of about 10 seconds
- Works everywhere 'out of the box' similar to your smartphone

Why 2-way data transmission?

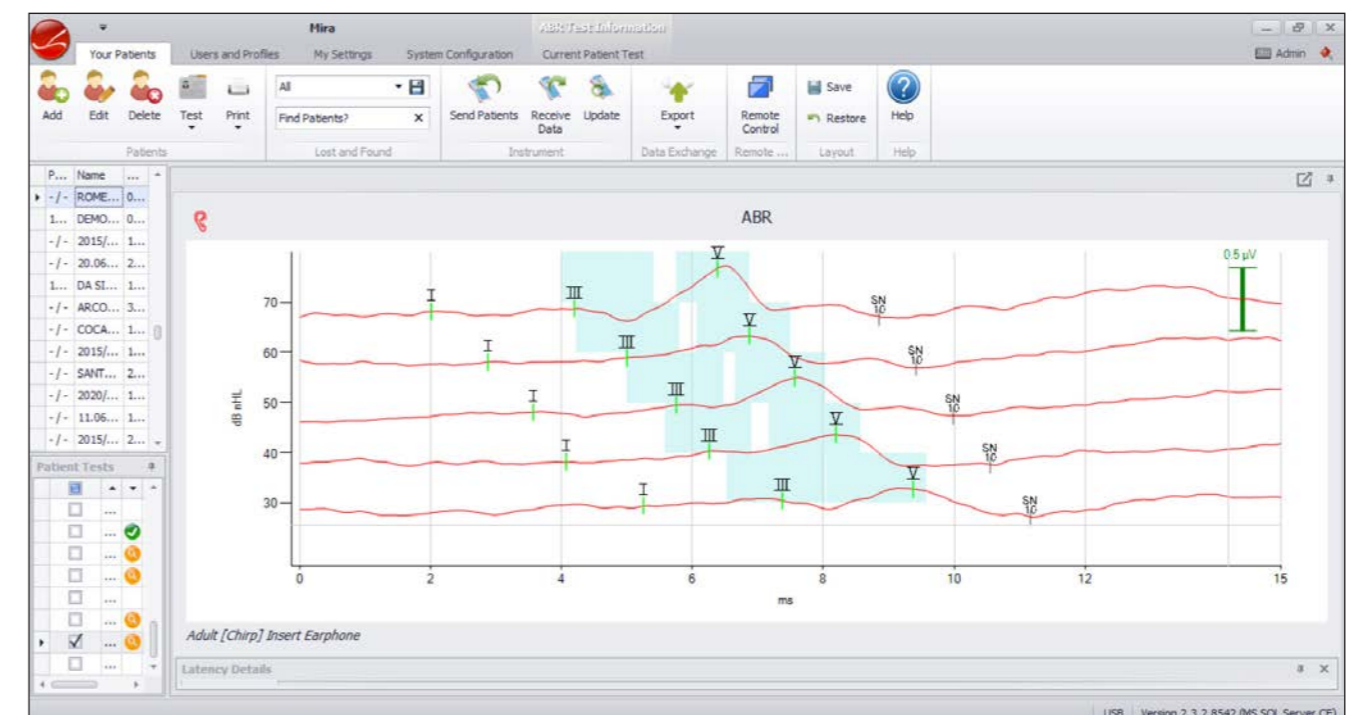
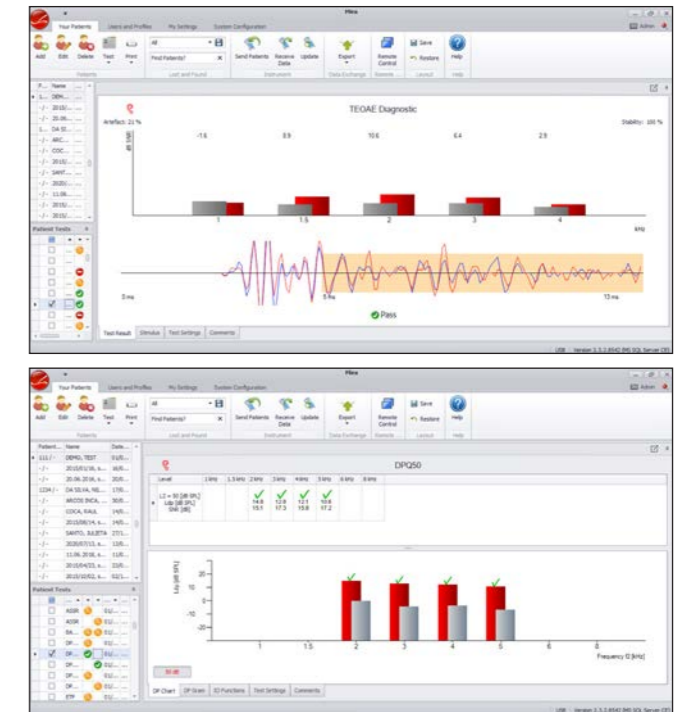
The bi-directional data exchange allows the central reporting site (e.g. a tracking center) the configuration of the remote device without on-site adjustments. No need to travel to remote sites – update the devices remotely! Changes to devices/presets are often necessary, e.g. when changing an examiner or the examiners data, after general changes of predefined comments or updates of the device firmware.

In the field of telemedicine the system allows central analysis by experts. Even for maintenance and service the loaner instrument immediately receives the settings from your current device. Via the pathTrack ClientConfigurator all configurations are created and distributed centrally. It simplifies the daily work for the user of the equipment as well as for the tracking center.

Maximum flexibility providing remote control and complete data integration

Main capabilities

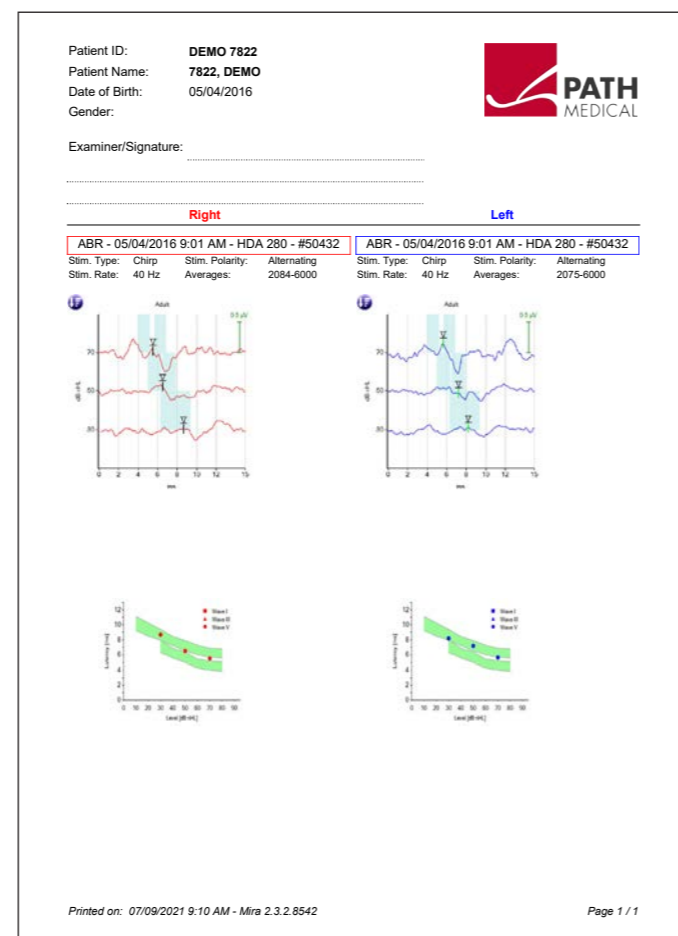
- Imports patients data test results and exports patients data and settings to the instrument via USB
- Seamless integration with NOAH
- Multiple reporting options, printouts and export formats
- User management and patient management search functions
- Instrument configuration & firmware update
- View, compare, comment, print test results
- Archive and backup
- Remote control function allows controlling the test from the PC
- Powerful analysis options and manipulation of test results
- MIRA direct print generates a pdf report immediately from the instrument via USB



Printing options

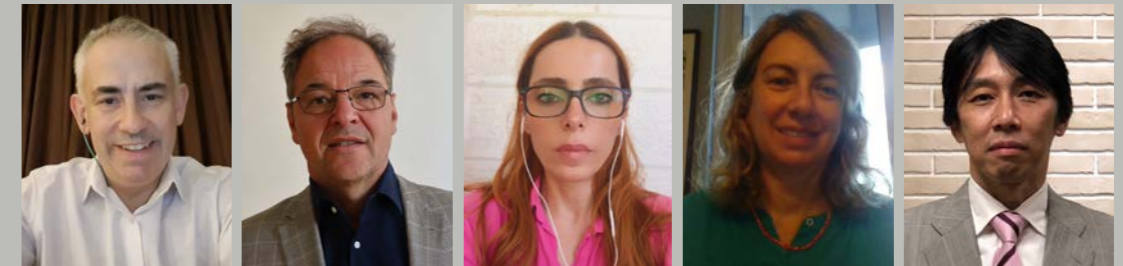
Maximum flexibility with a choice of print solutions

- 2 choices of label printer (Seiko and Able)
- MIRA direct print to PDF (free of charge)
- Multiple print options through MIRA SV



Meet the team at PATH MEDICAL

Sales



Operations



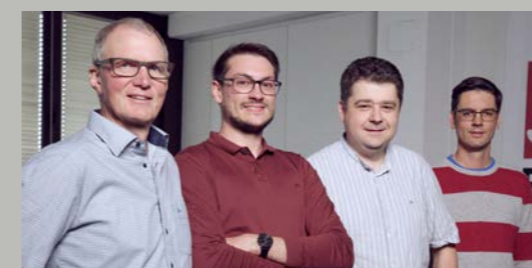
Development



Production



Service



Quality Management



Made in Germany



PATH MEDICAL GmbH

Landsberger Straße 65
82110 Germering / Germany

Tel +49 89 800 76 502 / Fax +49 89 800 76 503
info@pathme.de / www.pathme.de