



BioMed Jena GmbH
-Biomedical Technology-

PRODUCT CATALOGUE
AUDIOLOGY

2020



CONTENT OVERVIEW

GUIDELINE WITH FUNCTIONAL ANALYSIS



AUDIOMETRY

eAUDIO^{USB}



MIDDLE EAR ANALYSIS

eTYMP^{USB}



EVOKED POTENTIALS

eABR^{USB}



ACCESSORIES

AudioBox

AudioControl

eAUDIO^{USB}

The new dimension for computer pure tone and speech audiometry.

The eAUDIO^{USB} is a modern computer based audiometry system designed for daily work.

Based on state of the art electronics the eAUDIO^{USB} creates new standards in 2 channel audiometry.

Standardized diagrams are integrated in clearly structured user interface which guarantee optimal use of the system.



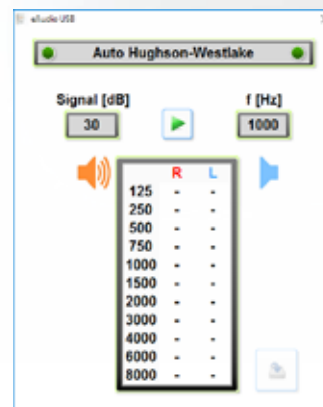
- » Air conductor:
 - Radioear DD65 V2
 - 125 - 8000 Hz
 - 10 ... 120 dB nHL
 - Sennheiser HDA 300
 - 125 - 16000 Hz
 - 10 ... 110 dB nHL
- » Bone conductor:
 - B81 (up to 85 dB nHL)
- » 3 active freefield channels
- » 2 line out channels
- » Microphone in and out
- » 2 line in
- » Patient response
- » grandiose design allows wall or desk mounting
- » USB 2.0



Overlay all data.



- » **Test signals: Manual, continuous and pulsing**
- » **Masking signals: narrow band noise, white noise**
- » **Threshold exceeding tests:**
 - SISI test**
 - Lüscher test**
 - Langenbeck test**
 - Stenger test**
 - Fowler test**
- » **Automatic audiometry modul (Hughson-Westlake)**
- » **Automatic calibration function**
- » **Speech in noise**
- » **Age-depended normative values**
- » **Tinnitus tone selector up to 16 KHz**
- » **Overlay function for all test**
- » **use of different transducers possible**
- » **compatible with Windows 7/8/10**

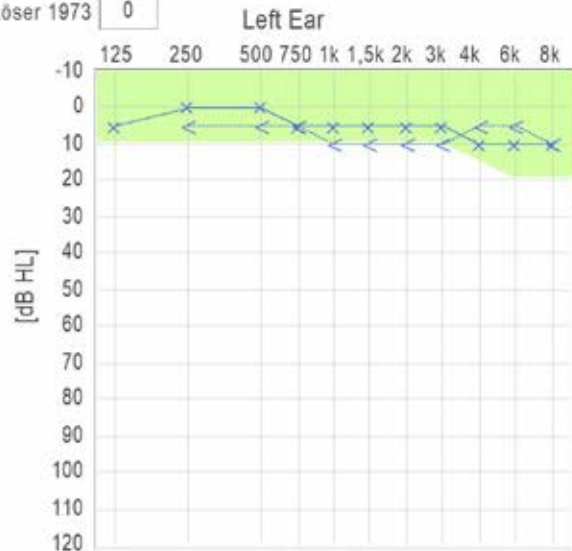
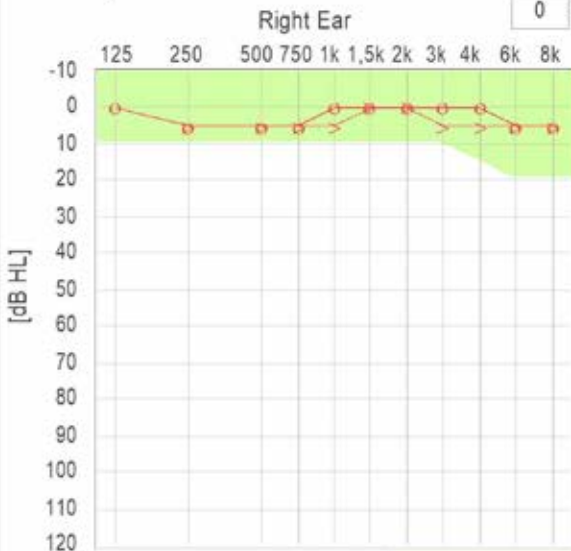


eAUDIO^{USB} is available as a diagnostic and clinical version.



Audiogram

0	Röser 1980	0
0	Röser 1973	0



Tinnitus:

	125	250	500	750	1k	1.5k	2k	3k	4k	6k	8k
AC	0	5	5	5	0	0	0	0	0	5	5
BC		5	5	5	5	0	0	5	5	5	5
FF											
SISI											

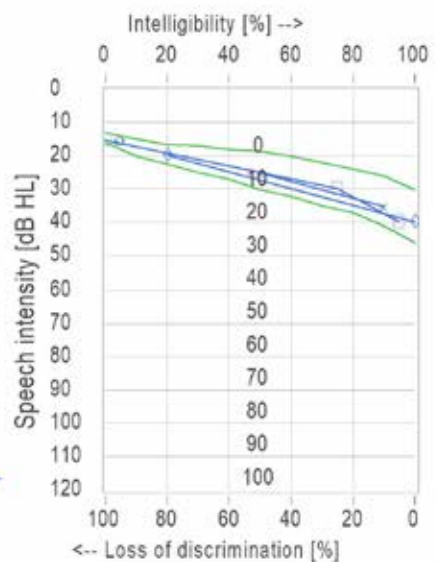
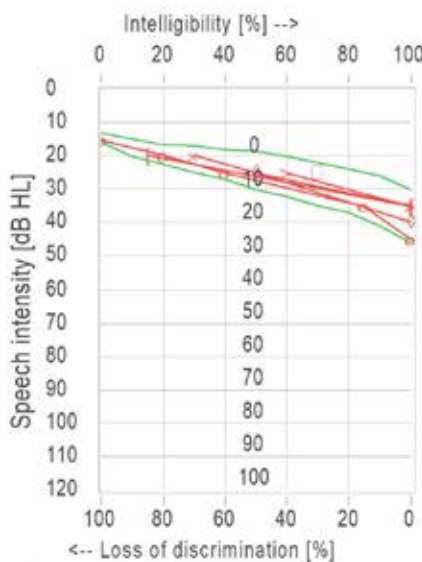
Tinnitus:

	125	250	500	750	1k	1.5k	2k	3k	4k	6k	8k
AC	5	0	0	5	5	5	5	5	10	10	10
BC		5	5	5	10	10	10	10	5	5	10
FF											
SISI											

Weber

Rinne

Speech Testing



	HL [dB]	Max. Intelligibility Words [%]	Max. Intelligibility Numbers[%]
AC	6,5	100	100
BC		100	100
FF	6,5	70	100

	HL [dB]	Max. Intelligibility Words [%]	Max. Intelligibility Numbers[%]
AC	6,5	5	90
BC			
FF	9,0	95	100



Middle Ear Analyzer

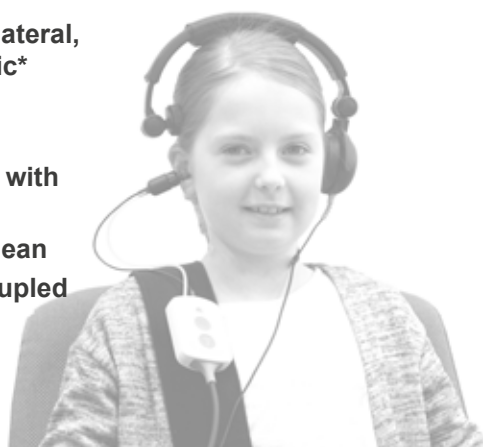
The **eTYMP^{USB}** is a computer based middle ear analyzer for practical routine and clinical applications.

The **eTYMP^{USB}** offers the possibility to create user-defined test protocols by combining different tests from the test battery into one test flow. For instance you can create a simple screening procedure and a more in-depth evaluation.

The device is characterized by its compact, functional and attractive design.

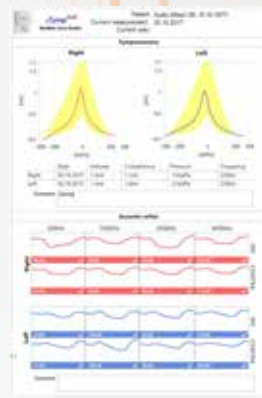


- » Tympanometry with 226 Hz (standard), 678 Hz and 1000 Hz
- » Acoustic reflex threshold testing - ipsilateral, contralateral, freefield* and nonacoustic*
- » Reflex decay testing - ipsilateral and contralateral
- » Eustachian tube function (ETF) testing with intact and perforated tymp. membran
- » Small and lightweight probe, easy to clean
- » Various trigger functionality over decoupled input and output.
- » Continuous measurement
- » Easy and Expertmode
- » USB 2.0



*optional

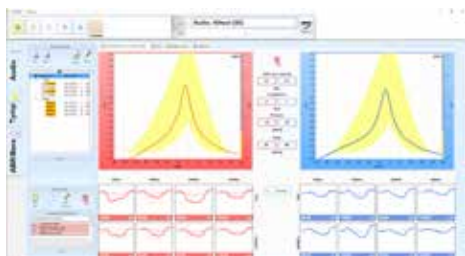
- » Triggered measurement of acoustic reflex caused by direct stimulation of the cochlear implant (CI)
- » Overlay curves from different measurements
- » Automatic altitude correction for exact admittance values
- » All relevant calibration values are stored in the probe



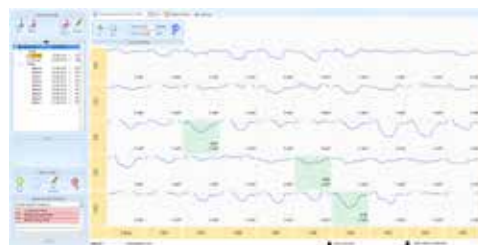
Software - eAUDIO^{USB}

The heart of the device beats in the computer. As a part of eAUDIO software all functions can be easily accessed. The device can be controlled manually or in a complete time saving automatic mode. With the eAUDIO^{USB} and the eABR^{USB} a modern diagnostic center can be build and all relevant data be seen at a glance.

Free online update of the software!



All data at a glance.



External stimulation of Acoustic Reflex.



Admittance Measurements

- » Probe tone frequencies: 226 Hz , 678 Hz, 1000 Hz +/- 1%
- » Probe tone intensities: 85, 80, 75 dB SPL +/-3dB.
- » THD+N: Less then 4% (acoustical measured)
- » Pressure range: +400 ... -600 daPa.
- » Pressure accuracy: +/-5% or 10 daPa
- » Compliance range: 0.1 ... 6.0 ml
- » Compliance accuracy: +/-5% or 0.1 ml
- » Pump velocity: 100-400 daPa/sec.
- » Pump control: Automatic/manual
- » Compliance unit: Equivalent air volume [ml] or mmho
- » Compliance graph: unlimited
- » LED function: Six colors and blinking LED shows current device and probe state.

Acoustic reflex

- » IPSI pure tone: 500,1000, 2000 and 4000 Hz +/- 3% + custom frequencies
- » IPSI intensity: Max. 110 dBHL +/- 3dB
- » CONTRA-pure tone: 500,1000, 2000 and 4000 Hz +/- 3%
- » CONTRA intensity: Max. 120 dBHL +/- 3dB
- » CONTRA head phone: DD45 Contra
- » THD+N: Less then 5% (acoustical measured)
- » Min. intensity: 40 dBHL
- » Measurement: Automatic or manual
- » Automatic Test: 5 dB/10 dB Steps per Frequency
- » Manual Test: unlimited curves per frequency and ear
- » Stimulus Duration: 0.4..1.5 second (Reflexdecay 60s)



Eustachian Tube Function

- » Perforated ear drum: Active and passive tube opening (Valsalva maneuver)
- » Intact ear drum: Williams test (3 Curves per Ear)

General

- » Size (LxHxW): 310mmx105mmx250mm
- » Weight: ca. 1500 g
- » Weight Probe: 12g
- » Power consumption: max. 20 W
- » Interface: Isolated USB 2.0
- » Test types: Tympanometry, Acoustic Reflex Threshold, Reflex Decay, Eustachian Tube Function (Intact and Perforated)
- » Contra output: 6,35 mm
- » Trigger input: 3,5 mm, optocoupler 5KV, I_{fd}=5-20 mA intern limited
- » Trigger output: 3,5 mm, optocoupler 5KV, open collector
- » Environmental: 10°C...40°C, max. 90% Humidity
- » Standards: DIN EN 60645-5
DIN EN 60601-1
EWG 93/42 EEC



All BioMed Jena products are developed
and produced in Jena, Germany



eABR^{USB}

2 channel modul for measuring not only auditory evoked potentials

The eABR^{USB} – small like a remote control- is the mobile full routine device for acoustic evoked potentials.

The eABR^{USB} combines newest state of the art electronics with an easy to use interface. This ensure best results in routine and clinical use.



Auditory evoked potentials

Vestibular evoked myogenic potentials (c- and oVEMP)

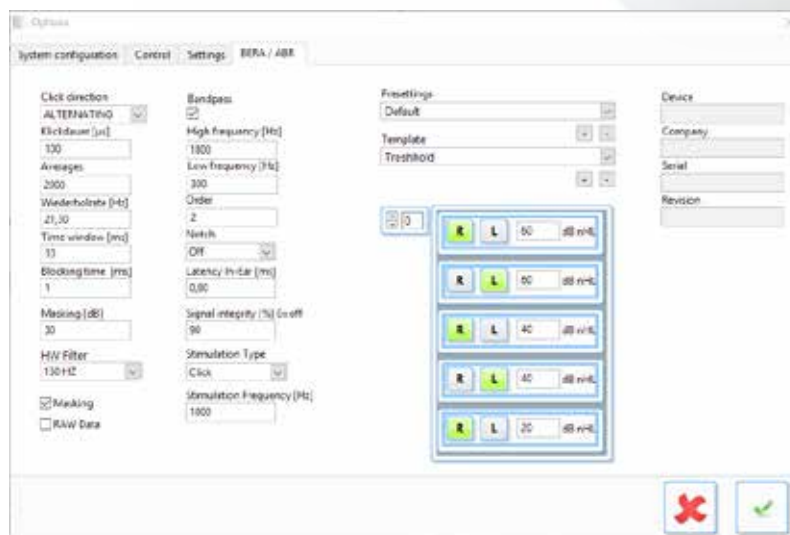


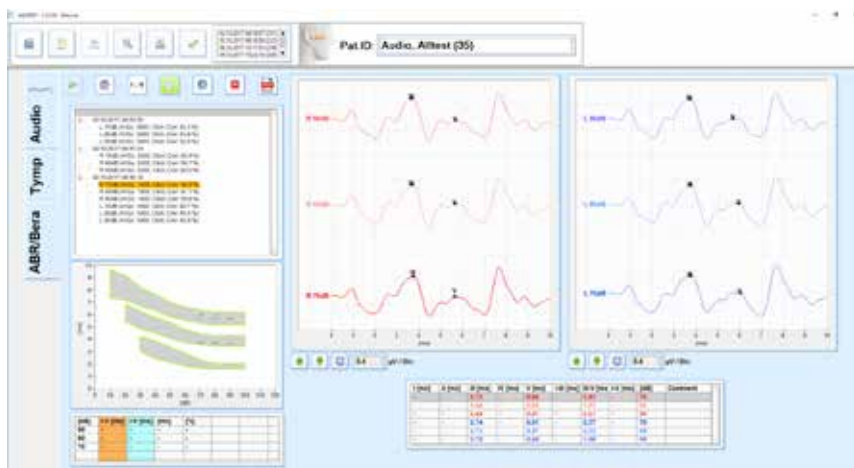
The **eABR^{USB}** has hardware encoded head and in ear phones. The device automatically selects the right calibration values. With the ability to create custom test protocols, the routine is simplified.

The **eABR^{USB}** also has an vestibular modul for c- and oVEMP testing*.

*optional

- » AC-Phones:
 - Sennheiser HDA 280
 - Radioear IP 30 Bera
 - » Click, Burst, Chirp
 - » Click: Pos., Neg. Alt.
 - » Masking: Noise
 - » ADC:
 - 2 Channel 24 Bit, 48KHz
 - » CMR > 130 dB @ 50 Hz/60HZ
 - » Up to 10.000 Sweeps
 - » USB 2.0 - bus powered
 - » EN 60645-7:2010
 - » Windows 7,8,10
- » Automated assistance functions:
 - Automatic electrode impedance control
 - Automatic gain control (AGC)
 - Automatic artefact rejection
 - Automatic stop function
 - » 24 Bit conversation
 - » Free definable protocols e.g. Treshhold-BERA
 - » c- and oVEMP*
 - » easy to use curve handling
 - » automated coupler detection
 - » Automatic PDF Export
 - » Lifetime free online software update





All BioMed Jena products are developed and produced in Germany





AUDIOBOX

4 to 6 channel free field amplifier

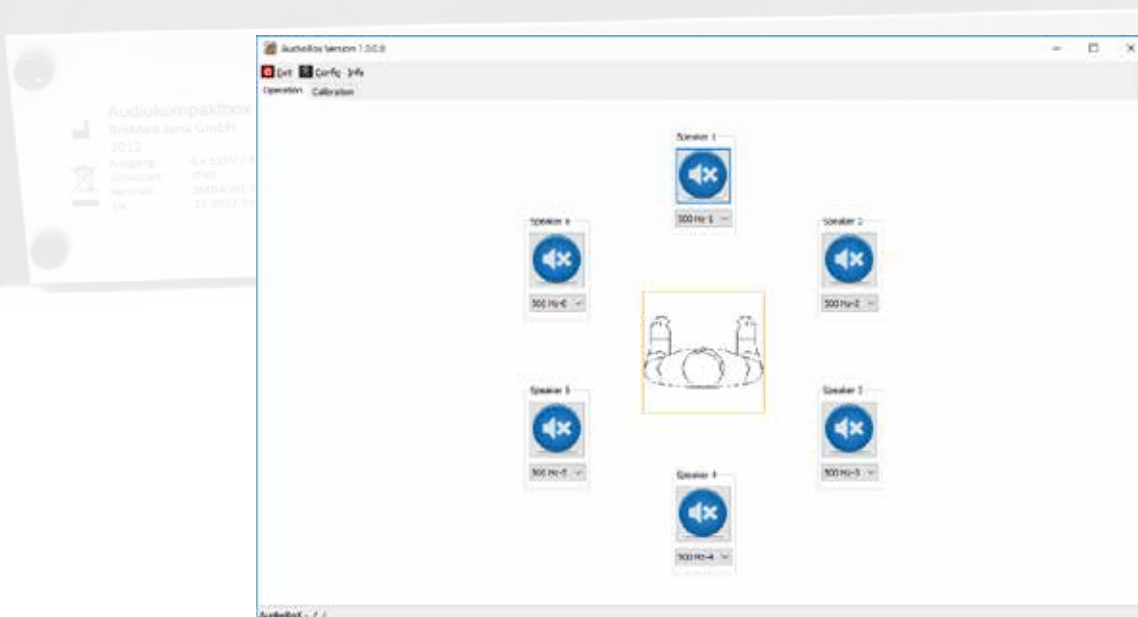
The AudioBox is a modern computer controlled free field amplifier for connecting up to 6 passive speakers. The 6 output channels can be assigned to 4 input channels. Each input channel can be individually calibrated with up to 50 positions (125 Hz, 250 Hz etc.). Furthermore, the device has, on customer request, 6 signal channels with which an event can be displayed.

The AudioBox can be used to extend a conventional audiometer for lateralisation analysis or pediatric audiometry.



Technical Specification

- » 4 Inputs max. 5 V
- » 6 Outputs with 100 W each
- » Isolated USB 2.0 interface
- » API for C/C++, C#, Delphi, Labview
- » Windows software
- » medical power supply



AUDIOCONTROL

The special keyboard for Audiometry

This special keyboard was developed for an ergonomic Audiometry operation. With 2 sliders the volume levels of tone and masking can be controlled. 16 touch buttons ensure absolute silent operation. This keyboard works with eAUDIO USB or with EVIDENT software.

For OEM applications the keyboard can easily be integrated via a HID-Joystick interface.







1997

Founded by Prof. Dr.-Ing. Lutz Herrmann and Dipl. Ing. René Schüler

Development and realization of new medical measurement methods and measurement systems in cooperation with numerous research institutes and clinics.

1998

Start of the vertigo diagnostic line as a OEM developer and manufacturer

OEM partner for several companies in the ENT field.

2004

Production start of the own brand the „e“ line with the **eVNG**.

2008

First VNG system with USB 2.0 and 100 Frames/s binocularly data acquisition → **eVNG^{USB}**

from 2011

Full solution of vestibular diagnostics with all products: **eHIT^{USB}**, **eSUV^{USB}**, **KALORistar**, **eVEMP^{USB}** and **KALORistarlet**

2015

ePOSTURO, **eDVA^{USB}** and manual pendula test.

2016

eMANAGER, **eFRENZEL^{USB}**, **eAUDIO^{USB}** and **eABR^{USB}**

2017

eTYMP^{USB} and move to new location „Am Egelsee 1“ in Jena.

2018/2019

Redesign of our air irrigator **KALORistar Arctic**







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