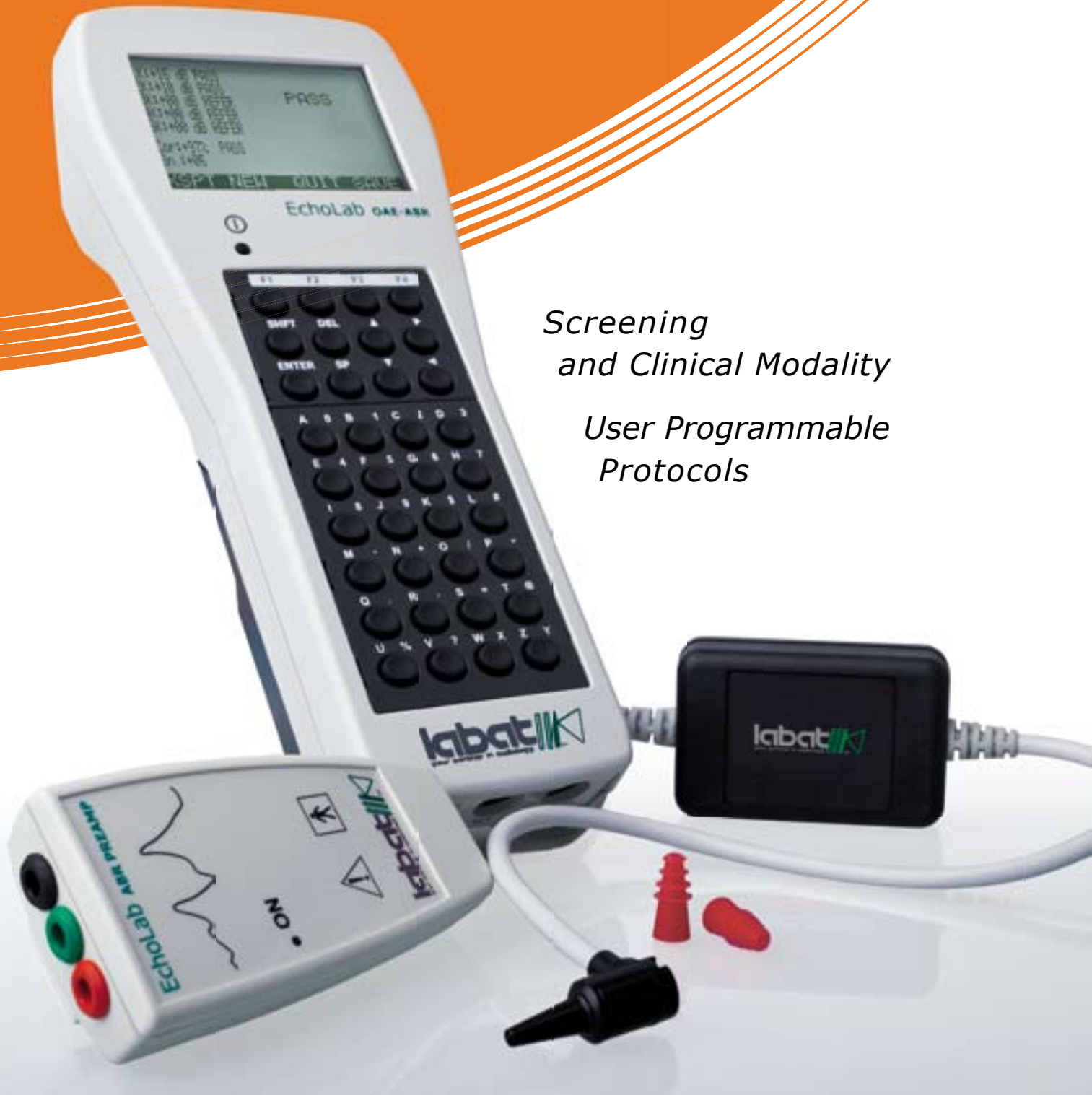


ECHOLAB

■ Otoacoustic Emissions System
TEOAE - DPOAE - ABR - AABR



*Screening
and Clinical Modality*

*User Programmable
Protocols*

ECHOLAB

■ Otoacoustic Emissions System
TEOAE - DPOAE - ABR - AABR



All of Labat's technology in the palm of your hand.

Innovative, fast, reliable. The Echolab is the ideal hand held unit for easy neonatal screening as well as clinical testing.

Simple to use, but with open software program which allows the Echolab to be used in the clinical setting or for research.

The Echolab system is ideal for all types of OAE testing TEOAE, DPOAE, Suppression test (with the optional noise insert). The Echolab can perform screening AABR testing using the optional preamplifier.





Screening, simple as the smile of a child.

EchoLab is the perfect answer for neonatal screening.

The large interactive display guides the operator through the various steps.

The automatic control of the probe and the calibration, combined with the real time measurement of the environmental noise, gives reliable results.

EchoLab is simple and comfortable, with a large internal memory allowing the storage of up to 250 tests so that it can be used for an extended period of time before having to download the data to a PC.



Light? Perfect.

The exceptional lightweight of the probe simplifies neonatal testing.

The ability to disconnect the probe end from the probe allows a proper cleaning.

Ear tips of various sizes are available and their design allows an easy insertion in the ear canal with an effective external noise reduction.



LAP, the most evolved audiological software.

Labat's has developed an exclusive software program as an answer to audiological needs.

The LAP program allows the direct transfer of data from the measuring instrument to the computer and simplifies the statistical data manipulation.

With the LAP program the user can visualize all the tests of each single patient. Statistical data can then be obtained by age, types of abnormalities, date of testing etc.

The LAP program is especially useful in neonatal screening to extract the REFER patients in order to automatically recall them for the next phase of testing.

The Lap program comes with all of Labat's audiological instrumentation.

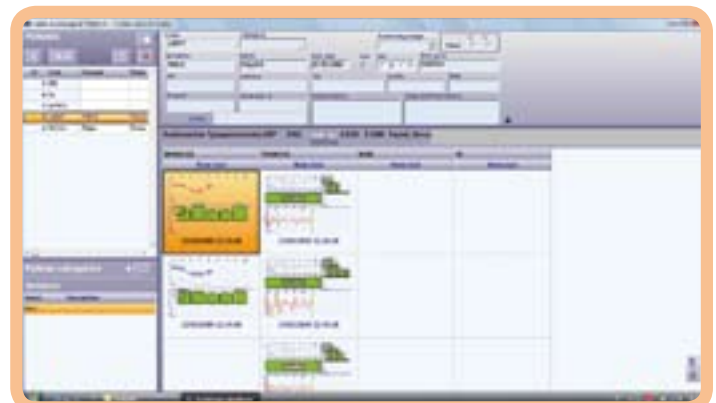
Data transfer via USB

In seconds the data is transferred from the Echolab to the PC.



Patient's Archive

Besides the normal personal data further specific information can be introduced so that the entire audiological history of the patient can be visualized at any time.

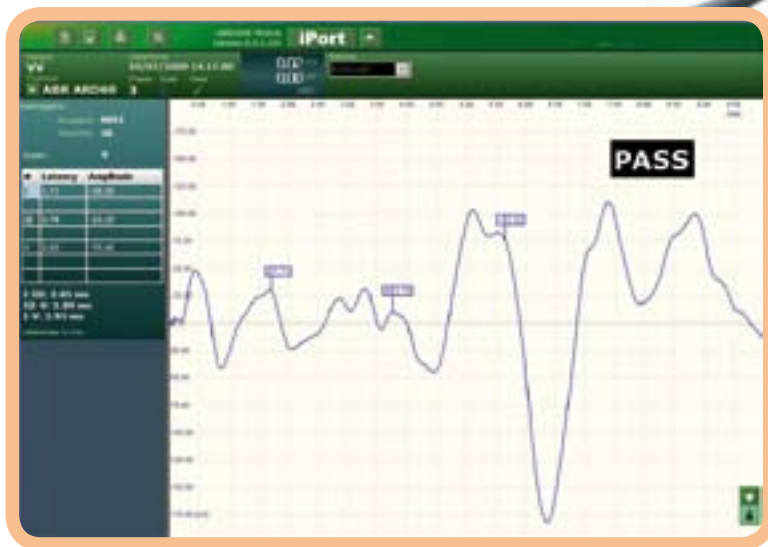


The ABR test

The optional preamplifier for ABR it becomes possible to conduct the ABR and AABR tests stimulating via the click generated by the same probe used for OAE.

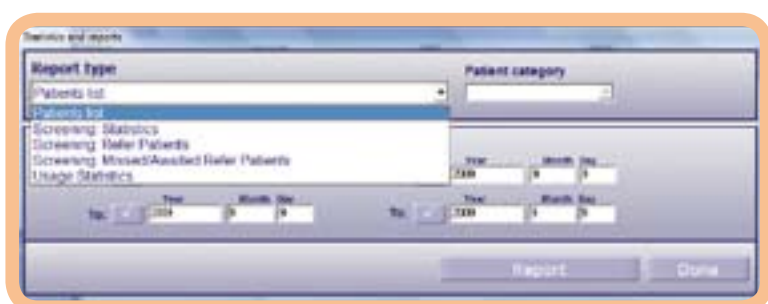
The electrode's impedance can be verified prior to testing. Visualization of the ABR trace is done in real time during acquisition and automatically in the AABR mode show Pass or Refer.

On the Echolab one cursor is available to measure latency. Within the LAP software up to 7 cursors are available. The stimulus intensity is user programmable.



Statistical data

Extraction of the data of the "refer" patients in any of the phases of testing. Export of data to external files. Create personalized letters to re-call "refer" patients.



All the information on the display

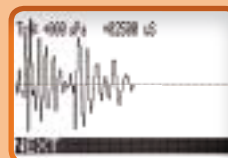
From the simple final Pass/Refer to the complete trace of the tests TEOAE, DPOAE, SPONTANEOUS and ABR.



TEOAE
Automatic
Pass/Refer results



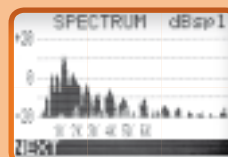
DPOAE
Complete DP-gram
with response and noise



TEOAE
Acquired response



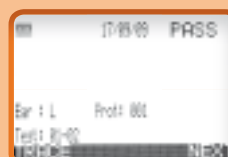
DPOAE
Histogram of F1/F2
And DP with Pass/refer



TEOAE
Response spectrum



PROTOCOLS
User selected



AABR
Actual ABR trace



TEST COUNT
According to type,
and possibility to view them
on the display

ECHOLAB OAE Technical Data

Labat's EchoLab: otoacoustic emissions system for screening and clinical testing with AABR option. Hand held unit with alphanumeric keyboard.

OAE

- TEOAE - transients
- DPOAE – Distortion Products

TEOAE – Linear and non-linear stimuli

- Frequency Range 1000-5000 Hz
- Frequency Resolution 50 Hz
- Frequency Accuracy $\pm 0,01\%$
- Stimulus Level 0-90 dB SPL
- Level accuracy ± 2 dB SPL
- Dynamic Range 90 dB SPL

DPOAE – distortion product

- Frequency Range 250-10.000 Hz
- Frequency Resolution 5,10,25 Hz programmable
- Frequency Accuracy 0,01%
- Stimulus intensity 0-90 dB HL
- Stimulus level accuracy ± 2 dB SPL
- Dynamic Range 90 dB SPL

LCD

- Graphic display 240x160 pixel high definition with visualization of: input signal, OAE trace, Spectrum, DP-gram, test results PASS/REFER
- Visualization of ABR trace

GENERAL CHARACTERISTICS OAE

sampling	TEOAE	DPOAE	
	25600	20480	25600 40000
Sampling per frequency	512	4096	1024 4000

- Microphone: 15 dB SPL a 1000 Hz 20 dB SPL a 2000 Hz
- Accuracy: 2 dB SPL microphone and in situ sound level
- Automatic in situ calibration

ACCESSORIES OAE

- SOAE probe
- Ear tips for adults and neonates
- Rechargeable NiMh battery
- Battery charger
- Probe cleaning kit
- CD with software LAP
- Carrying case
- Instruction manual

INTERNAL MEMORY AND DATA TRANSFER

- 250 test
- USB connection to PC

POWER SUPPLY

- Rechargeable NiMh battery with duration per charge > 8 ore
- Automatic low battery warning
- Universal charger

AABR Technical Data

AQUISITION

- 16 Bit ADC - CMR> 100dB
- Filters 100 Hz - 2500 Hz
- Analysis time: 10, 12 o 15 ms programmable
- Stimulus rate: up to 18/sec
- Number of averages: 1000 or programmable
- Automatic artifact control

STIMULUS

- click - positive - negative - alternate
- Max Intensity 90 dB SPL

ELECTRODES IMPEDANCE CHECK

- Differential single electrode control

GRAPHIC VISUALIZATION

- ABR waveform during acquisition and final result Pass/Refer
- Latency cursor for wave V
- Test parameters

STANDARD ABR ACCESSORIES

- ABR amplifier with cable
- 10pkgs. of 3 pediatric electrodes pre-jelled single use

GENERAL Information

ENVIRONMENTAL

Temperature shipping/inventory: -20°C +50°C, -4°+122°F
Temperature working +15 +35°C, +60 + 95°F
Humidity: 30% - 90%

DIMENSIONS / WEIGHT

cm 9,5 (w) x 23 (h) x 5,5 (d) - 3,7" (w) x 9" (h) x 2,2" (d)
Net weight: 493 g – including battery

STANDARD

Audiometric Units: EN 60645-1 (1994); EN 60645-3 (1995);
ANSI S3.6 (1996); EN ISO 389 (1995);

Safety: EN 60601-1 (1990); CLASSE 2 TIPO B
EN 60601-1-1 (2001) - EMC; EN 60601-1-2 (1993)

The data can be changed without pre-notification

CE
0051