

The smart choice for
hearing screening programs



ECHO CHECK



Otodynamics

ECHOCHECK™

Numeric

The **ECHOCHECK** is a hand-held screening device for use in hearing assessment programs. It features efficient and trusted TEOAE technology and provides fast objective indication of healthy cochlear function. Tiny echoes in response to a mild clicking sound delivered by the **ECHOCHECK** probe are recorded, processed and evaluated by the **ECHOCHECK**'s OAE processor. Even slight sensory hearing loss usually stops the production of these echoes. For more than a decade Otodynamics' TEOAE screening systems have been used on many hundreds of thousands of infants, in more than a thousand centers around the world. The professional consensus is that screening with TEOAEs is sensitive and reliable. It is found that 30dB sensory hearing loss leads to the absence of TEOAEs.

ECHOCHECK proven OAE technology

The **ECHOCHECK** delivers proven OAE testing power right into your hand - wherever and whenever you need it. The **ECHOCHECK** incorporates the industry standard ILO88 nonlinear TEOAE acquisition and validation system - 'Quickscreen'. This ensures reliable, fast OAE results free from misleading artefacts - a hallmark of ILO systems since 1989. The **ECHOCHECK** has a common-sense built-in Pass criteria too, based on the ILO's well proven cross-correlation and signal-to-noise method. Like automated ABR, the **ECHOCHECK** only conducts a test if conditions are right, and it only recognises signals showing typical OAE characteristics. The **ECHOCHECK** automatically stops and recommends a Pass as soon as it confirms the presence of a valid response across the speech frequency band. What could be simpler?

ECHOCHECK applications

The **ECHOCHECK** ideally meets the needs of intensive universal newborn hearing screening programs where the convenience, portability and speed of the **ECHOCHECK** achieve high specificity and coverage - even in early discharge regimes. Nursing staff and health visitors appreciate the simplicity of operation of the **ECHOCHECK**. It's a powerful test because TEOAEs specifically target the cochlea. There is no evidence of any significant risk of missing hearing losses in the well baby or low risk population with this method. TEOAEs complement ABR measurements in the high risk population too. Their use on certain types of high risk infant *in addition* to ABR together with their use on *all* infants prior to hearing aid fitting, reduces the danger of false diagnosis and inappropriate amplification. OAEs save you time

as they are quicker to perform than ABR under comparable conditions and sensitivity targets. TEOAE disposables also are much cheaper than ABR supplies. In the USA, OAEs are reimbursable with CPT code 92587.

The **ECHOCHECK**'s uses are not limited to infant screening. The instrument automatically adapts to ears of any size and is a valuable first stage in any audiological investigation. Normal OAEs are blocked by middle ear fluid and ear canal debris.

ECHOCHECK operation

The **ECHOCHECK** is live to sound and probe fit as soon as it is turned on. Once the probe is well fitted into an ear, touching the START key commences the entire in-the-ear calibration and OAE test sequence. Brightly coloured indicators show the test progress and then the result. Once completed, touching the left illuminated button (Start/Stop) or the right illuminated button (Store/Recall) saves the test details in the memory, including date, time, ear and result. If the optional printer is connected, an automatic printout is produced. Up to 96 test results can be stored in the **ECHOCHECK** and downloaded to your PC if required, using the supplied software. Reliability of the instrument is ensured by the diagnostic test automatically implemented each time the ON button is pressed. Acoustic and probe fit conditions are clearly indicated.

Numeric display

The **ECHOCHECK** features an LED readout of the OAE dB SPL, unique test ID number, internal time and date.

ECHOCHECK probe

The **ECHOCHECK** probe is based on 12 years experience. It is suitable for all ages and is supplied with a wide range of disposable plastic ear tips. The probe may be disassembled for cleaning and the replacement of coupler tubes.

ECHOCHECK specification

Test stimulus: a click of 84dB SPL p.e. repeated 100 times per second. In-the-ear calibration with automatic ear canal size compensation at test start. Accommodates newborn to adult ear canals. Sensitive to OAEs from 1-4kHz with a primary response band of 1.6-3.2kHz. Validation by the nonlinear cross-correlation method (ILO88). Pass criteria: +6dB wideband signal-to-noise ratio with a marginal indication at +3dB. Memory capacity: up to 96 test events including date and time, test result, ear tested, test ID, ear canal size, OAE and noise intensity data.

ECHOCHECK printout

The standard **ECHOCHECK** will print a test report directly on a serial (label) printer. The printout includes test sequence number, time and date of test, test result with recommendation for further testing, together with numerical data on the stimulus, OAE response and noise level during testing. Otodynamics provides an optional battery powered, portable, serial, mini-printer - which is color co-ordinated.

ECHOCHECK PC and pocket PC links

Windows software is supplied as standard with the **ECHOCHECK** and provides a data-link with any PC via the serial port. Application software is included for data management allowing names and details to be added to a database of **ECHOCHECK** test results, and the transfer of this data to patient management packages including 'OZ'. The PC link is also used to set the internal clock of the **ECHOCHECK** to local time. Pocket PC software is available from your dealer to interface your Echocheck to your PDA.

Indicators

- Positive OAE indicator
- Marginal OAE indicator
- Invalid Test indicator
- Stimulus in-range detector
- Low noise indicator
- Ear canal fit indicator
- Progress/memory indicator
- Numeric 4-digit LED - time, date, test ID, OAE dB SPL

OAE Probe

- 1 General Purpose Serviceable TE for newborn and adult use

Controls

- On/Off control and indicator
- Start/Stop test control
- Store left and right ear/ Recall/Print test results

Connectors

- Probe/Battery recharge socket
- Serial port, download/update, printer jack

Software

- Internal software held on replaceable ROM
- PC Windows® software on CD for uploading test records

Options

- Otodynamics battery powered, serial port, mini-printer (dimensions: 5in x 5in x 2.25in, weight: 14.75oz)

Hardware

The **ECHOCHECK** and all accessories are supplied in a zip-up bag. **ECHOCHECK** Dimensions: 7.45 x 3.6 x 1.15in reducing to 1in. Weight: 11oz. Charger: 110/240V input, 13V output. Internal rechargeable 2.4V battery. Battery life: 2-5 days of typical use per charge. Self-adhesive score pads.

Standards

The **ECHOCHECK** complies with all current regulatory and safety standards and is totally battery powered. The TEOAE method has an exceptionally good false negative record proven over 10 years. Classification: Internal battery powered system, Type BF, Charger Class I. To be manufactured and sold to meet IEC601, EN60601-1, BS5724-1, CSA 22.2 No. 601-1, CE, EMC. Protected by copyright and patents including: USA 4374526, Canada 1146659. Otodynamics is an ISO 9001 compliant company.

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