

OAE Test System

by Maico Diagnostics



ERO • SCAN™

EroScan™ Pictured



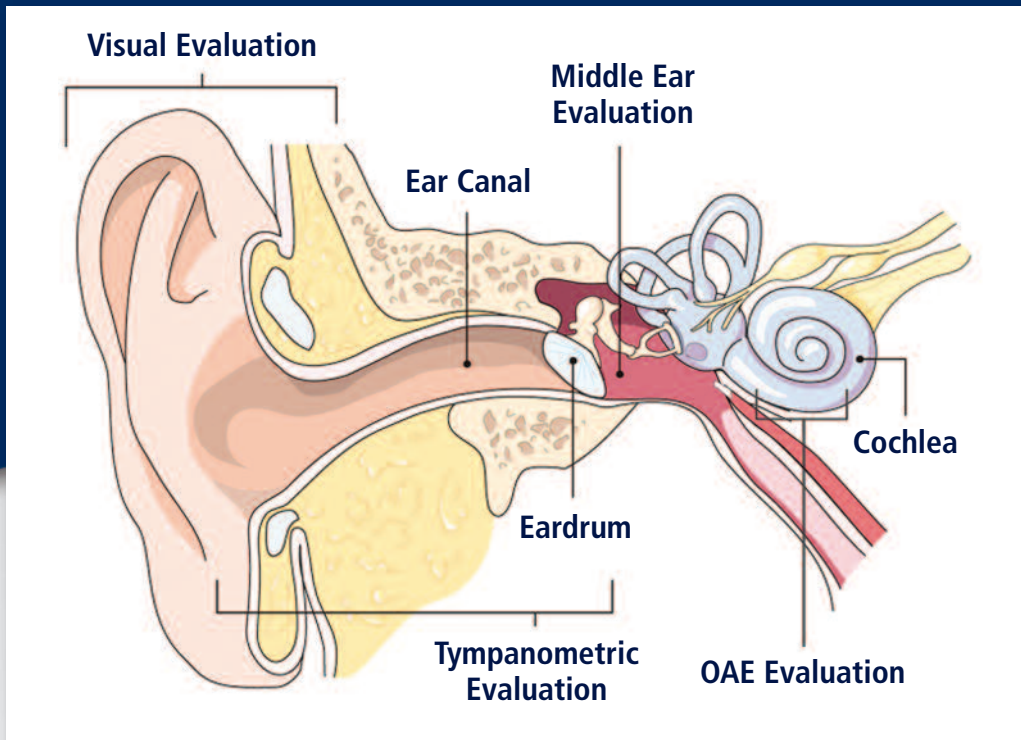
- OAE Hearing Screener
- DPOAE/TEOAE Test Systems



www.maico-diagnostics.com

Ero•Scan - OAE Test System

Ideal for...



- Physicians
- Pediatricians
- Birth-to-3 Programs
- School & Head Start Programs
- Nurseries

Otoacoustic Emissions (OAEs)

Otoacoustic emissions are sounds that are produced by the cochlea (outer hair cells) and can be measured in the ear canal. When sound passing through the ear canal reaches the cochlea, the vibration stimulates thousands of tiny hair cells. This creates a byproduct that can be detected and measured: otoacoustic emissions.

OAEs only occur in a normal cochlea with normal hearing sensitivity. If there is damage to the outer hair cells, which produces hearing loss, then OAEs will not be present. In general, OAEs will be present if hearing is at 30 dB or better.

PASS test results mean OAEs were detected. If there is damage to the outer hair cells producing a mild hearing loss, OAEs may not be present. The test result is REFER and the patient may be at risk for possible communication difficulties and can benefit from further diagnostic assessment.



Physicians

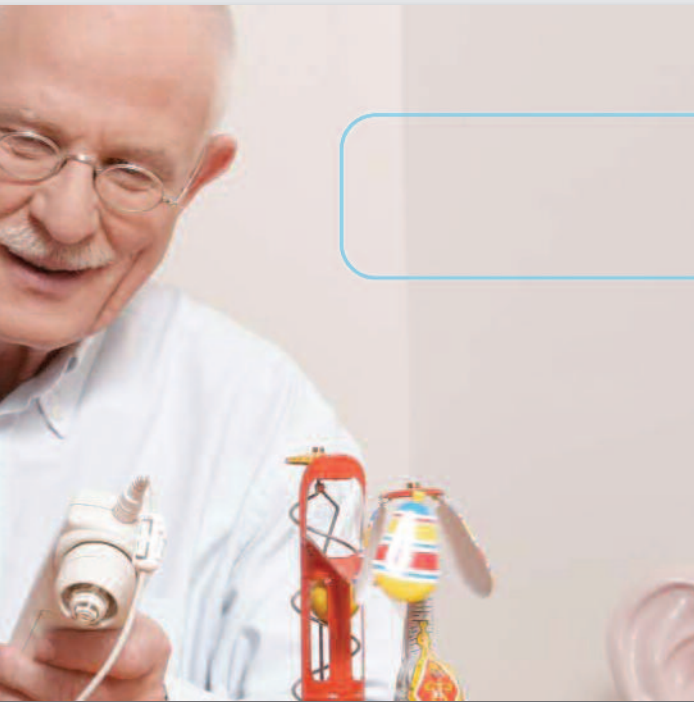
Otoacoustic emissions testing is an ideal tool for hearing screening because it can quickly identify a possible hearing loss and signal referral for more comprehensive testing.

Pediatricians

Hearing loss is not always identified by newborn screening. Pediatricians are the first professionals the parents approach with concerns about their child's hearing. Since hospital-based and private practice pediatricians screen infants and young children for hearing loss and middle ear disorders, incorporating OAEs into this routine testing can be greatly beneficial.

Head Start and School Screening

The Maico EroScan is an effective tool for Head Start and school programs as a means to document hearing testing as well as screen large numbers of children very quickly. Since there is no need for a behavioral response from the patient, it is easy to test ESL and special needs children.



Utilizing OAEs

- Follow-up infants from nursery screening and well-baby checks
- Identify and monitor middle-ear pathology such as otitis media
- Use with tympanometry to rule out middle ear pathology
- Monitor cochlear function in those who are taking medication that is potentially ototoxic
- Differentiate between organic and non-organic hearing loss
- Identify educationally significant hearing loss
- Detect late-onset hearing loss

This procedure is also beneficial in assessing children that cannot be tested by conventional means. For example, pure tone audiometry requires a response from the child which may be an unrealistic expectation and time-consuming.



Ero•Scan™ Classic

- **DPOAE & TEOAE Combination Test System**

Managing Data

The EroScan's optional database integrates tests data into Hi-Track or OZ for state tracking. Using the database also gives you a means to create detailed, color reports in a letter-sized format that can be easily filed or faxed. You can also create a "paperless" office by saving the test results as a PDF for electronic filing or email.



Diagnostic Testing

The EroScan is an effective diagnostic testing tool for otologists, audiologists and otolaryngologists that provides objective information about hearing and middle ear status with only one test. Identify outer hair cell function in the cochlea, assess middle ear function and differentiate between organic and non-organic functional hearing loss. OAEs are also beneficial in assessing patients who cannot be tested by conventional means.

Utilizing OAEs

An OAE test can contribute a valuable piece of clinical data towards your accurate diagnosis and has the following uses:

- Differentiate possible cochlear versus retrocochlear pathology
- Identify suspected malingering or non-pathological hearing loss
- Identify autoimmune or sudden hearing loss
- Monitor ototoxicity on the cochlea
- Provide objective cochlear screening in both non-cooperative patients and cooperative patients where behavioral testing cannot be performed
- Detect early signs of noise exposure in those who are exposed to high noise levels
- Detect possible late-onset hearing loss
- Screen for early effects of ischemia on the cochlea

ERO-SCAN OAE Test System

ERO-SCAN
Ear Resonance Oscilloscope

DPOAE Distortion-Product Otoacoustic Emission Test Report

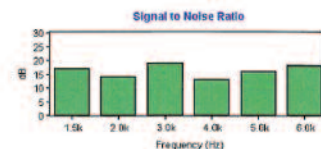
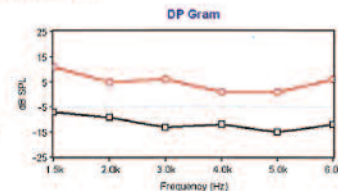
Right Ear : Pass

Patient Name: John Jameson
Patient ID: JJ34532
Date of Birth: 2/1/1967
Sex: Male

Test Number: 1 Test Date: 10/26/1999 12:27 PM
Tester: S Monroe Physician: Pomeranz
Test Mode: CustomA Avg. Time: 2
Firmware: 5.92

F2	F1	F2	DP	NE	SNR	
1.5	44	48	11	-7	17	P
2.0	49	55	5	-9	14	P
3.0	44	48	6	-13	19	P
4.0	49	48	1	-12	13	P
5.0	49	40	1	-15	16	P
6.0	45	48	6	-12	18	P

Notes:



DPOAE Distortion-Product Otoacoustic Emission Test Report

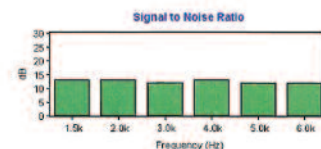
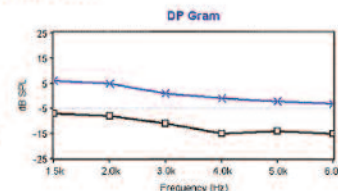
Left Ear : Pass

Patient Name: John Jameson
Patient ID: JJ34532
Date of Birth: 2/1/1967
Sex: Male

Test Number: 2 Test Date: 10/26/1999 12:27 PM
Tester: S Monroe Physician: Pomeranz
Test Mode: CustomA Avg. Time: 2
Firmware: 5.92

F2	F1	F2	DP	NE	SNR	
1.5	43	45	6	-7	13	P
2.0	48	53	5	-8	13	P
3.0	44	48	1	-11	12	P
4.0	50	48	-1	-15	13	P
5.0	51	42	-2	-14	12	P
6.0	47	49	-3	-15	12	P

Notes:



MAICO DIAGNOSTICS ERO-SCAN Database Software Ver. 7.70.1 Copyright © 2004 Elymco Research

Reimbursement

Otoacoustic emissions are reimbursable using the Current Procedural Terminology (CPT) codes. The most typical CPT code for OAE diagnostic.

92587:

Evoked otoacoustic emissions; limited (single stimulus level, either transient or distorted products). This is the most typical code and would be considered a "screening" code.

92588:

Comprehensive or diagnostic evaluation (comparison of transient and/or distortion product otoacoustic emissions at multiple levels and frequencies). This is for diagnostic OAE testing.



Ero•Scan™ Classic

• DPOAE & TEOAE Combination Test System

Test both ears in less than a minute

Testing takes less than 30 seconds per ear.

Results are displayed as PASS or REFER

The easy-to-read results do not require interpretation.

Managing data

Printing color reports and tracking data is easy with the optional database software.

State reporting

The optional database integrates data into HiTRACK or OZ.

Accurate results

The patented EroScan noise algorithm allows for reliable testing in up to 70 dB of background noise which means fewer false REFER results.



Portability

The EroScan hand-held unit runs on batteries and allows you to move from room to room. The remote probe also makes it easy to maneuver around the head of your patient to attain a tight ear seal.

Memory

The EroScan contains memory to store complete tests for 50 ears.

Print the results

The included thermal printer will print the test results as soon as you replace the unit in its cradle for easy filing.



Rubber Tips

Rubber tips come in several sizes including the specially-designed newborn sizes shown below.

Red treetop tip: Newborn

Green mushroom tip: Newborn/youth – up to 9 months old

Blue mushroom tip: Pediatric (various sizes)

Yellow mushroom tip: Adult (various sizes)

Parts & Accessories

The ERO•SCAN OAE System is available in three configurations: Screener, Standard and Diagnostic Combo System



PRODUCT FEATURE	ERO•SCAN SCREENER	ERO•SCAN STANDARD	ERO•SCAN COMBO
DPOAE/TEOAE	DP or TE	DP or TE	DP and TE
Diagnostic (CPT) 1 92588	N	Y	Y
Printer Included	Y	Y	Y
Portable	Y	Y	Y
Internal Probe	Y	Y	Y
External Probe	Y	Y	Y
Maximum number of Test Frequencies or Bands Reported	4 DP 6 TE	6 DP 6 TE	6 DP 6 TE
Frequency Range	2-5 DP 1.5-4 TE	1.5-12 DP .7-4 TE	1.5-12 DP .7-4 TE
High Frequency DPs to 12 kHz	N	Y	Y
Default Pass/Refer	Y	Y	Y
# of Test Protocols	1	2	4
Memory (# tests)/Maximum	50	50	50
Tests All Ages	Y	Y	Y
Tests Patients with PE Tubes	Y	Y	Y
Customizable Test Protocols	N	Y	Y
Customizable Pass Criteria	N	Y	Y
Database Software (Cost Option)	Optional	Optional	Optional
Prints Numeric Data	Y	Y	Y
Prints Graphic Data	Y	Y	Y
Customizable Averaging Time	Y	Y	Y
Date/Time on Print-Out	Y	Y	Y
OZ Compatible	Y	Y	Y
HI*TRACK Compatible	Y	Y	Y
Customizable Parameters	N	Y	Y
Freq. Range (DPs and TEs)	N	Y	Y
Average Time (DPs and TEs)	N	Y	Y
# Freq. Tested (DPs)	N	Y	Y
All test protocol changes can be made through OAE unit alone (Additional software and computer NOT required to change protocols)	Not Customizable	Y	Y



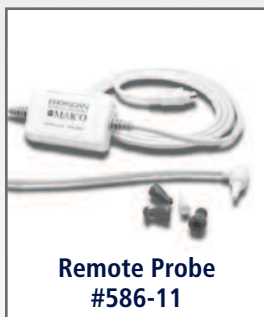
Cradle #586-5



**Ear tips
#586-16**



**Probe Tips
#586-2**



**Remote Probe
#586-11**



**Carrying Case
(optional accessory)
#586-7**



**Database Software
(optional accessory)
#586-12**



**Printer Paper
#586-8**



**Remote Probe Tips
#586-14**



Innovation, Continuity, Reliability,

MAICO Product Line:

- Screening Audiometers
- Diagnostic Audiometers
- Middle Ear Analyzers
- OAE Test Systems
- PC Compatible Products

This brochure contains only a small segment of the comprehensive product portfolio of MAICO. To find out more about other solutions, please contact us at:

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