

Comprehensive auditory and vestibular tests in a single software package



ICS CHARTR EP

Data management

Hearing assessment

Fitting & Testing

Balance assessment

GNI Otometrics

Innovative diagnostics for ASSR and VEMP

ICS CHARTR EP has long been the industry's premier system for evoked-potential diagnostics thanks to its accuracy and reliability. With cutting-edge technology, this software suite has been enhanced with two important assessment protocols: ASSR (auditory steady-state response) for pediatric testing and VEMP (vestibular evoked myogenic potentials) for balance disorders.

Designed specifically with test administrators in mind, CHARTR EP lets you extend your diagnostic capabilities with a range of convenient options including a portable unit for multi-site mobility. Moreover, its user-friendly platform includes numerous functions to enable easier assessment and superior

analysis, such as user-defined settings, multi-tasking, multiple protocols, and much more.

Convenience and compatibility

CHARTR EP gives you an effective platform for assessing practically every auditory disorder. And as part of the growing family of hearing and balance instrumentation from GN Otometrics, it is completely compatible with our entire product range. In short, with CHARTR EP, you'll have everything you need to meet the needs of all your patients - from newborns through adults.





CHARTR EP supports compatibility and integration with the entire range of hearing and balance instrumentation from GN Otometrics. These solutions include:

Pediatric hearing loss:

- *MADSEN AccuScreen*
- *ICS CHARTR EP*
 - *ASSR*
 - *PediABR*
- *MADSEN Capella*
- *MADSEN OTOflex 100*

Adult balance disorders:

- *ICS CHARTR EP*
 - *ECoG*
 - *VEMP*
- *ICS CHARTR VNG/ENG*

Effective infant follow-up

Screening newborns for potential hearing loss is rapidly becoming the rule rather than the exception. And that means there is a growing demand for follow-up testing and intervention for those infants who are suspected of having a hearing loss.

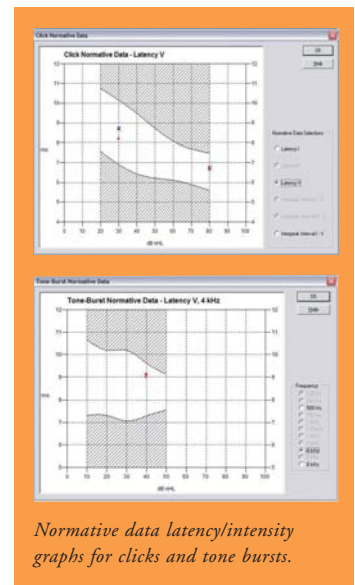
Leading health organizations recommend a battery of follow-up tests, including auditory brainstem response (ABR), auditory steady-state responses (ASSR), otoacoustic emissions (OAE) and multi-frequency immittance tests.

By integrating cutting-edge technology systems, GN Otometrics combines ICS CHARTR EP with its trusted MADSEN Capella OAE

and MADSEN OTOflex 100 immittance unit to effectively meet all of these needs.

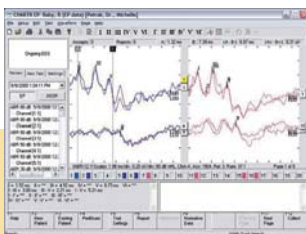
Integrated PediABR

PediABR is particularly valuable when performing ABR on infants and other difficult-to-test patients. Its unique applications are specially designed to quickly conduct a series of tests. Linked protocols and baby-sensitive features ensure minimal disturbance of patients during testing. It's simple to manipulate, highlight, and label waveforms, and display normative data graphs with just a single click of the mouse. In fact, our convenient one-step operations extend to report generation and estimated audiogram charts.



Normative data latency/intensity graphs for clicks and tone bursts.

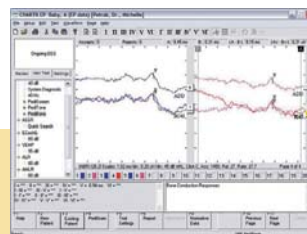
Here are just some of the features of CHARTR EP with PediABR:



Pediatric screening protocol

PediScreen

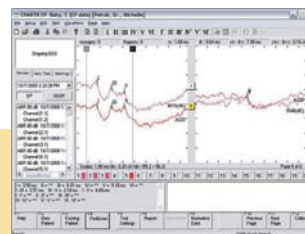
Performs a quick screening ABR using PediScreen to validate initial screening results.



Pediatric bone conduction protocol

PediBone

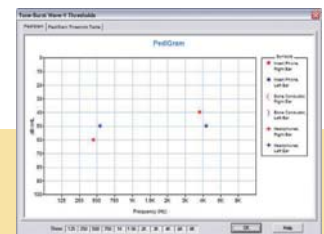
If the baby fails PediScreen, PediBone enables bone-conducted testing to determine if a conductive component is the origin of the hearing loss.



Pediatric tone burst protocol

PediTone

If the hearing loss is sensorienural, PediTone provides frequency-specific thresholds in the range of 250-8000 Hz (dB nHL).



Audiometric tone burst plots

PediGram

A single mouse click labels the waveforms and PediGram plots the data on a frequency/intensity graph similar to an audiogram.

Objective threshold testing using RapidASSR™

CHARTR EP provides an integrated solution for obtaining ear-specific, frequency-specific auditory threshold information. The automated ASSR program allows you to quickly and objectively acquire an audiogram. And thanks to the RapidASSR™ response detection algorithm, it's possible to collect up to eight frequencies simultaneously.

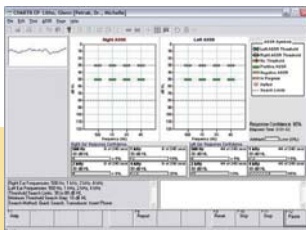
Intuitive interface

The identified thresholds are displayed directly on the screen, color-coded for easy interpretation ("green" responses are present, "yellow" responses are not present). The final printout provides a corrected audiogram display.



ASSR highlights

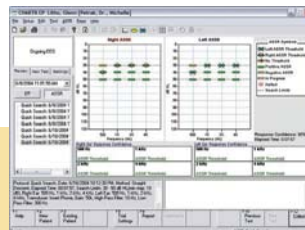
- 8 frequencies tested simultaneously
- Efficient search methods - Quick Search and Straight Descent
- User-adjustable parameters
- Integrated platforms for VNG/ENG
- Proven RapidASSR™ response detection algorithm



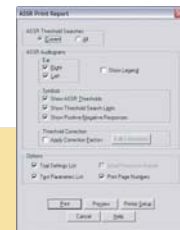
Quick Search - user sets start and stop limits and the algorithm automatically determines the minimum steps necessary.



Straight Descent - user selects start and stop limits.



*Thresholds - identified within limits of user-selected limits.
Review Tab - stores all data.*



Flexible reporting and printing.

Supplementary vestibular assessment

Using a single computer platform, you can now perform a complete battery of tests and collect a wide range of information from all your patients - in less time and with less effort than ever before. Moreover, ICS CHARTR EP can be fully integrated with ICS CHARTR VNG/ENG technology to form a comprehensive, state-of-the-art test suite.

Complete solution for assessing dizziness

VEMP (vestibular evoked myogenic potentials) seamlessly integrates with our CHARTR VNG/ENG system to create the only complete solution package for assessing

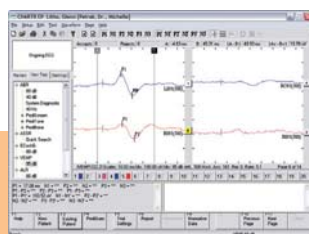
dizzy patients. The vestibular evoked myogenic potential (VEMP) is a new test of vestibular function that is useful for evaluating the function of the otolith organs and the sacculocollic pathway in dizzy patients. The VEMP supplements the VNG/ENG test battery by providing additional diagnostic information, thus enabling a more comprehensive diagnosis.



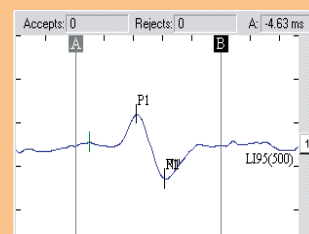
The VEMP protocol in CHARTR EP supports non-invasive testing with surface electrodes applied to the anterior neck muscles (sternocleidomastoids - SCM). The patient can lie down or sit up with their head turned toward the contralateral side. Clicks or tone bursts are then presented to the ear ipsilateral to the SCM muscle being evaluated.



Default protocol for VEMP testing with user-adaptable parameters.



Default protocol for VEMP included in the New Test Tab.



Normal adult VEMP response for the left ear.

Multiple solutions - multiple test protocols

With just one device, you can now perform the preferred battery of tests and collect multiple pieces of information on your full range of patients, using less time and effort than ever before.

CHARTR EP addresses a wide range of clinical applications including:

- The identification of neurological abnormalities in the VIIIth cranial nerve and auditory pathways of the brainstem.
- Estimation of hearing sensitivity based on the presence of a response at various intensity levels.
- Identification of Ménière's disease through electrocochleography.
- Identification of saccular and/or inferior vestibular nerve function in dizzy patients.

ABR/ASSR is useful for the neonatal and infant population as it can be measured during sleep so there is minimal influence of artifact from muscle tension.

Investigations have shown that there is a strong correlation between behavioral hearing threshold and the ABR threshold. When used appropriately, ABR and ASSR are accurate tools for estimating hearing sensitivity in newborns and infants.

PC - CHARTR EP WIN XP computer package.



Optional portable computer system for EP and VNG/ENG.



Features:

	CHARTR EP	CHARTR EP with ASSR
Configuration	Standard - includes PediABR, VEMP, MLR, LLR, P300 and ECoG	Includes all standard EP features plus the ASSR hardware and software
Stimulus	Click or tone burst	Modulated pure tones
Transducers	Insert, bone, headphone	Insert, bone, headphone
Data collection	Collects one ear at one frequency per intensity step.	Collects both ears simultaneously at 4 frequencies per intensity step.
Intensity	0-90 db HL	0-120 dB HL
Electrode placement	Low forehead, high forehead and both ears	Low forehead, high forehead and nape
Patient state	Resting but awake	Sleeping or sedated
Interpretation	Audiologist subjectively identifies responses	Automated algorithm objectively identifies responses
Clinical purpose	Neurodiagnostic assessment and audiometric threshold estimation	Audiometric threshold determination
Patients	Adults and pediatrics	Infants and difficult-to-test patients
Hardware configuration	2 channel audio board clicks and tone bursts	Audio board with clicks and tone bursts and multiple AM/FM modulated tones
Operating system	Win98 and WinXP/Oct	Win98 and WinXP/Oct
Accessories	ECoG kit, disposable electrodes, prep-paste	Pediatric attached lead electrodes, prep-paste
Software (ASSR)	No	Yes
Manual	Update to version 4.0	Update to version 4.0

GN Otometrics is the world's leading manufacturer of hearing and balance assessment instrumentation and software. Our extensive product portfolio ranges from infant screening applications, audiologic diagnostics, and office management software, to balance testing and hearing instrument fitting.

As an organization, we are committed to developing innovative, integrated solutions that help healthcare professionals make the best possible decisions. This, in turn, helps our customers improve the overall standard of patient care wherever they are located.

Based in Copenhagen, Denmark, we maintain marketing and development centers in both the United States and Germany. GN Otometrics is part of GN.



Find out more about our comprehensive new solutions for balance assessment and advancing pediatric hearing at www.gnotometrics.com



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