It is now recognized that early intervention is critical to speech and language development in hearing impaired infants and children. Available interventions include fitting a hearing aid before six months or performing a cochlear implant as early as one year of age. Selection of the proper plan requires accurate, detailed information about the hearing loss at all frequencies important for speech and language development. This makes it critical that hearing clinicians have an objective, reliable method for measuring frequency specific hearing thresholds in newborns and infants with mild to profound hearing loss. While various technologies including OAe, ABR, and visual reinforcement audiometry have been used, new techniques provide the most fully meeting the need.
The Demand
Universal newborn hearing screening using OAE and ABR technology is expanding globally. This result in that more infants require diagnostic follow-up testing. Consequently, there is a greater demand for accurate and frequency-specific hearing assessment of these infants. In addition, there are applications in special children and adults for frequency-specific objective testing.

The Solution
Auditory Steady State Response (ASSR) is the solution for frequency-specific hearing assessment for people of all ages. It is called the steady-state auditory evoked potential (AEP). ASSR meets all the criteria for follow-up diagnostic testing.

Auditory Steady-State Response
- Can be reliably recorded in sleeping neonates, children and adults
- Are evoked by frequency-specific tonal stimuli
- Obtained using statistical algorithms, and estimated audiograms
- Provide reports on screen and print them in full-size single-page format in black and white or color

And now the ASSR solution is available in a clinical environment — the GSI Audera.

Delivering AEP, ASSR and OAE

ASSR Software Features:
- Clinically-validated protocols — University of Melbourne
- All ASSR information is shown in a single display
- Continuous live display allows easy monitoring of ongoing EEG signals
- Electrode attachment integrity can be measured with a one-button, on-screen impedance measurement
- The behavioral audiogram is estimated using GSI Audera’s testing capabilities: ABR, ECochG, ASSR, and DPOAE

ASSR Auditory Steady-State Responses
Obtain frequency-specific ASSR results and an estimated audiogram using GSI Audera’s testing features. Designed with the user in mind, these features have been refined with more than 10 years of clinical use.

AEP, Auditory Evoked Potentials
User-friendly software allows both novice and experienced users to make use of these additional AEP testing capabilities:
- Electroencephalography (EEG)
- Auditory Brainstem Responses (ABR)
- Auditory Middle Latency Responses (AMLR)
- Long Latency or Cortical Responses (LLR)
- Auditory ABR

OAE Software Features:
- All OAE information is shown in a single display, including the FFT
- On-screen display of ongoing input signals
- Display results for different tests, recorded with different time bases, in a single chart
- Unlimited number of user-defined test protocols
- Evoke the ASSR with AM/FM modulated tonal stimuli
- Electrode attachment integrity can be assessed with a one-button, on-screen impedance measurement
- Continuous live display of ongoing input signals
- Data collected with different protocols can be displayed in the same chart or different charts
- User-definable markers/measurement tables

OAE Otocoustic Emissions
With its combination of reliable DP technology, user-friendly graphic interface, and easy-to-understand results, the GSI Audera DPOAE is the instrument of choice for otocoustic emissions testing in hospitals, clinics, and offices around the world.

The GSI Audera
For over 60 years Grason-Stadler (GSI) has been “Setting The Clinical Standard” in Audimetry, Tympanometry and hearing healthcare diagnostics. Far more than a tagline, it is embedded in the corporate DNA and is the driving force behind everything we do.

Quality
Quality was by far the most frequently used word by our partners to describe the company and the brands. Quality product quality has been a hallmark of the GSI brand over the years, and remains the cornerstone of the success story people have with the company to this day.

Reliability
Reliability, durability, longevity, trustworthiness; GSI products exceed industry expectations regarding reliability. It has become another way of defining the organization and a proven hallmark of a partnership with GSI.

User-Friendly
As hearing healthcare technologies become more sophisticated, the plethora of potential functionality can become quite overwhelming and complicated. This is why GSI has always worked closely with our partners to identify and prioritize what product functionality is most important to them, how it should be conveyed, and what will provide maximum user and patient benefit.

GSI AUDERA™
COMPLETE EVOKED POTENTIAL ASSESSMENT

Setting The Clinical Standard

Setting The Clinical Standard

The Clinical Standard

Setting The Clinical Standard

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**GSI AUDERA™ COMPLETE EVOKED POTENTIAL ASSESSMENT**

**The Demand**
Universal newborn hearing screening using OAE and AEP technology is expanding globally. This result in more infants require diagnostic follow-up testing. Consequently, there is a greater demand for accurate and frequency-specific testing of these infants. In addition, there are applications in school children and adults for frequency-specific objective testing.

**Setting The Clinical Standard**
For over 60 years Grason-Stadler (GSI) has been “Setting The Clinical Standard” in Audiology, Tympanometry and hearing healthcare diagnostics. Far more than a driving force behind everything we do. Market feedback confirmed that GSI is seen as the Clinical Standard. It also established the three attributes most identified with the GSI brand: Quality, Reliability, User-Friendly. Of these attributes, Quality was by far the most frequently used word by our partners to describe the company and the brand. Product quality has been a hallmark of the GSI brand over the years, and remains the primary reason customers have with the company to this day.

**Quality**
Reliability, durability, longevity, trustworthiness, GSI products exceed industry expectations regarding quality. It has become another way of defining the organization and a raison d’être of a partnership with GSI.

**User-Friendly**
As hearing healthcare technologies have developed, the user number of potential features can become quite overwhelming. This is why GSI has always worked closely with our Partners to identify and prioritize what product functionality is most important to them, how it should be conveyed, and what will provide maximum user and patient benefit.

**Setting The Clinical Standard**

**The Solution**
Auditory Steady State Response (ASSR) is the solution for frequency-specific hearing assessment for people of all ages. Also called the steady-state auditory evoked potential (AEP), ASSR meets all the criteria for follow-up diagnostic testing.

**Auditory Steady-State Response**
- Can be reliably recorded in sleeping neonates, children and adults.
- Are evoked by frequency-specific tonal stimuli.
- Can be reliably recorded in sleeping neonates, children and adults.
- Have thresholds that are highly correlated with behavioral audiogram thresholds.

And now the ASSR solution is available in a clinical instrument — the GSI Audera.

**The GSI Audera**

The GSI Audera streamlines your workflow for evidence-based clinical practice by providing a unique combination of Auditory Steady State Response (ASSR) testing and multifrequency auditory potentials (AEP, ECochG, ASSR and CALP).

**ASSR Auditory Steady-State Responses**
Obtain frequency-specific ASSR results and an estimated audiogram using GSI Audera’s testing features. Designed with the user in mind, these features have been refined with more than 20 years of clinical use.

**AEP Auditory Evoked Potentials**
Use GSI Audera to assess both cochlear and retro-cochlear function with these additional AEP testing capabilities:
- Electrocochleography (ECochG)
- Auditory Brainstem Responses (ABR)
- Auditory Middle Latency Responses (AML)
- Long Latency or Cortical Responses (LLR)
- Electrode (EBR)

**OAE Otoacoustic Emissions**
With its combination of reliable OAE technology, user-friendly graphic, interface and easy-to-understand results, the GSI Audera OPOAE is the instrument for otoacoustic emissions testing in hospitals, clinics and offices around the world.

**Setting The Clinical Standard**

**AEP Software Features:**
- Click, tone pip and tone burst stimuli with contralateral and binaural presentations
- No predefined limits on number of waveforms displayed
- Multiple panels of waveforms displayed simultaneously
- Continuous live display of ongoing input signals
- Display results for different tests, recorded with different time bases, in a single chart
- Unlimited number of user-defined test protocols
- User-definable marker/measurement tables
- Continuous live display of ongoing input signals
- Masking available
- Clinically-validated protocols - University of Melbourne
- Built-in, one-button electrode impedance measurement
- Unlimited number of user-defined test protocols
- User-definable marker/measurement tables
- Continuous live display of ongoing input signals
- Masking available

**AOE Software Features:**
- All OPOAE information is shown in a single display, including the FFR
- Reliable, high-quality output
- Automatic scoring available for OPOAE
- Spontaneous OAE functionality included
- Easy upgrades for existing GSI Audera systems with software and probe

**OAe Software Features:**
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- Reliable, high-quality output
- Automatic scoring available for OPOAE
- Spontaneous OAE functionality included
- Easy upgrades for existing GSI Audera systems with software and probe

**AEP Software Features:**
- Clinically-validated protocols - University of Melbourne
- All ASSR information is shown in a single display
- Continuous live display allows easy monitoring of ongoing ASSR signals
- Electrode attachment integrity can be assessed with a one-button, on-screen impedance measurement
- Enables the ASSR with AEMR modulated testing strategy for the 250-5000 Hz frequency range
- Objective ASSR detection using patented algorithms eliminates tester subjectivity and provides quality control
- ASSR thresholds can be measured to ± 5 dB accuracy
- The behavioral audiogram is estimated using patented algorithms, and a confidence interval is calculated for each threshold
- With one click of a button, quickly change between displaying individual trial results, ASSR threshold plots, and estimated audiograms
- Provide reports on screen and print them in full-size, single-page format in black and white or color

**Detect thresholds in seconds with maximum user and patient benefit.**

**Delivering AEP, ASSR and OAE**
- Clinically-validated protocols - University of Melbourne
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**User-Friendly**
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**Reliability**
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Auditory Steady-State Response
- Can be reliably recorded in sleeping neonates, children and adults.
- Are evoked by frequency-specific tonal stimuli.
- Can be detected objectively using statistical analysis.
- Have thresholds that are highly correlated with behavioral audiogram thresholds.
- Can be used in place of behavioral threshold-side.

And over the ASSR solution is available in a clinical instrument — the GSI Audera.

Setting The Clinical Standard

GSI AUDERA COMPLETE EVOKE POTENTIAL ASSESSMENT

Delivering AEP, ASSR and OAE

ASSR Software Features:
- Clinically validated protocols - University of Melbourne
- All ASSR information is shown in a single display
- Continuous live display allows easy monitoring of ongoing ASSR signals
- Electrode attachment integrity can be assessed with a one-button, on-screen impedance measurement
- Complies with the ASSR protocol in several ranges
- The behavioral audiogram is estimated using well-known ASSR algorithms
- More reliable, faster, and easier to use with ASSR
- Highly correlated with behavioral audiogram thresholds when compared to them, how it should be conveyed, and what product functionality is most important
- Work with our Partners to identify and prioritize features that can become quite overwhelming.
- Developed, the vast number of potential features can become another way of defining the organization and the brand.

QAE Software Features:
- All OAE information is shown in a single display, including the FFT
- Optimize provide input-output function analysis
- Automatic scoring available for OPOAE
- Spontaneous OAE functionality included
- Easy upgrades for existing GSI Audera systems with software and probes

OAE Software Features:
- All DPOAE information is shown in a single display, including the FFT
- Optimize provide input-output function analysis
- Automatic scoring available for OPOAE
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- Easy upgrades for existing GSI Audera systems with software and probes

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- Low Latency or Cortical Responses (LLR)
- Electrode (AEoP)

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- Low Latency or Cortical Responses (LLR)
- Electrode (AEoP)

Electrical (ABR)
- Long Latency or Cortical Responses (LLR)
- Auditory Brainstem Responses (ABR)

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Features

GSI Audera Main Unit
- Separate output jacks for left, right and bone transducers, and a free-field speaker output eliminates time wasted switching between transducers
- Built-in mains isolation transformer for safety provides isolated power for a notebook computer and an inkjet printer
- Standard USB interface connects to virtually all of the latest computers
- High-speed serial interface connects to the GSI Audera digital amplifier subsystem

GSI Audera Digital Amplifier Subsystem
- Small size and weight facilitate convenient placement near the patient
- Full two-channel capability for ipsilateral/contralateral ABR recordings
- Isolation for patient safety
- Digital connection to main unit minimizes interference from external noise sources
- Built-in impedance measurement with LED readout at the amplifier minimizes preparation time

GSI Audera OAe Probe
- Superior probe design for neonatal to adult testing
- LED indicates test status
- Backward compatible with all GSI Audera systems

GSI Audera is Compatible With Most Personal Computers
- 32-bit application software operates in several versions of Windows
- Operates with display resolution of 1024 x 768 or higher
- Uses standard Windows drivers for printing on the device of your choice
- Patient database can be backed up on most Windows-compatible archiving devices

GSI Audera's Standard TIP-50 Insert Transducers
- Foam tips of various sizes eliminate the problem of collapsing ear canals
- Sink 2.5 and 3 mm tips included for tiny infant canals
- Silicone tubes create an acoustic delay, minimizing the click stimulus artifact in ABR recordings
- Stimuli are calibrated in dB HL for ASSR testing and in dB nHL for AEP — calibration data is provided for each transducer set

It is now recognized that early intervention is critical to speech and language development in hearing impaired infants and children. Available interventions, including fitting a hearing aid before six months or performing a cochlear implant as early as one year of age. Selection of the proper plan requires accurate, detailed information about the hearing loss at all frequencies important for speech and language development.

This makes it critical that hearing clinicians have an objective, reliable method for measuring frequency specific hearing thresholds in infants and infants with mild to profound hearing loss. While various technologies including OAe, ABR, and visual reinforcement audiometry have been used, these techniques prevent them from fully meeting the need.

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This makes it critical that hearing clinicians have an objective, reliable method for measuring frequency specific hearing thresholds in infants and infants with severe to profound hearing loss. While various technologies including OAe, ABR, and visual reinforcement audiometry have been used, those techniques cannot provide the precise data required for making critical treatment decisions.

GSI Audera® is designed for easy, accurate, and reliable OAE measurements. The GSI Audera OAe Probe features:

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- LED indicates test status
- Backward compatible with all GSI Audera systems

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GSI Audera is complete evoked potential assessment.