GSI AUDIOSTAR PRO™

CLINICAL TWO-CHANNEL AUDIOMETER



Setting The Clinical Standard

gsi Grason-Stadler

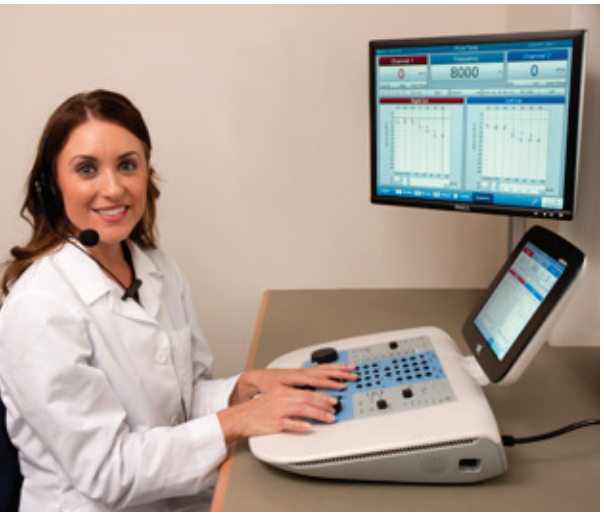
GSI AUDIOSTAR PRO™

CLINICAL TWO-CHANNEL AUDIOMETER



Tradition of Excellence

The GSI AudioStar Pro™ continues the tradition of excellence in clinical audiometry by maintaining the Grason-Stadler legacy of fast, efficient, and familiar navigation.



The one-button, one-function front panel of the AudioStar Pro is recognized worldwide as the Gold Standard of user-friendly design, allowing audiologists to test with confidence. AudioStar Pro has every desired feature such as: an extra large display that reduces eye strain, an ergonomic housing that maximizes hand and wrist comfort, and light pipes around selected test buttons allowing concentrated focus on the patient.

Stand-Alone/ PC Enabled

Audiologists appreciate the flexibility of a stand-alone audiometer that offers seamless data transfer to a computer. In the event of a network failure or computer lock-up, you will not lose patient data or the ability to test. The stand-alone configuration is optimized with direct connection to a wireless keyboard and mouse making it fast and easy to enter patient demographics, report comments, and expedite test administration. In addition, direct connection to a printer and the integrated print button make it possible to print a complete report for immediate review with the patient or physician.

EMR/EHR Ready

User login and password controls provide security for patient data in compliance with HIPAA. Complete audiometric results can be transferred to software such as GSI Suite and Noah® 4, or integrated with your facility's EMR/EHR system.

EMR/EHR Compatible

GSI Suite

GSI Suite captures, saves and shares patient information improving reporting to support the needs of the contemporary clinic. GSI Suite is now available as a Noah module for seamless integration to hearing aid fittings.



GSI Suite Features

- Powerful custom report designer
- Select from a variety of provided report templates
- Test results in EMR/EHR compatible format (PDF)
- Retrieve test results for review
- Print reports from PC compliant printers
- Network results from multiple instruments by combining GSI Suite with OtoAccess™ or Noah 4

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Setting The Clinical Standard

Technical Features

Panel Navigation

Gold standard ergonomic design with familiar one-button, one-function front panel navigation.

Custom Configuration

Configurable tests and preferences to improve workflow and optimize speed of testing.

Special Tests

Pre-configured special tests such as QuickSIN, BKB-SIN, TEN (HL), ABLB, SISI and Tone Decay addresses the research trends in hearing evaluation.

Assistant Monitor

Allows direct communication between operator and assistant eliminating the need for an external intercom system.



Word Lists

Integrated internal digital word lists provide effortless access to commonly used word lists providing consistent and reliable recorded speech testing.



Two-Channel Control

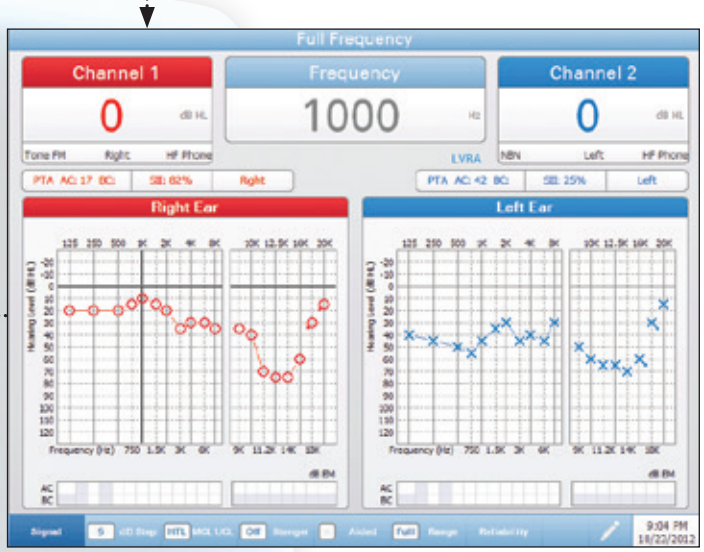
Audiologist can mix signals and route them to either one or both ears making hearing evaluations easier than ever.

Direct Print

Expedite the data entry and test administration. Use the external keyboard and mouse to enter patient demographics, session comments and print a complete report to a connected printer.

Data Transfer

Electronic data is transferred with a single button press.



VRA Controls

The built-in VRA controls allow for fast and simple activation of VRA systems.



On-Board Navigation

Access integrated word lists and menu selections using the front panel navigation.

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Fast

Features such as speech auto play, auto advance and auto frequency selection allow the examiner to improve productivity and patient flow. Standard features, such as the headset microphone, allows the operator to communicate directly with patients while the built-in monitor speaker makes it easy for third parties to participate in the hearing evaluations. Sound field options are available from the standard 90 dB HL output to the high performance speakers with 96 dB HL - both without any external amplification needed. The maximum output of 102 dB HL is available with an external amplifier - achieving the highest output in the industry. Four speaker calibration is available for advanced sound field testing. One button, one function incorporated with a large display maintains the GSI legacy of fast and efficient navigation.

Familiar

The AudioStar Pro maintains the user friendly interface that has defined GSI since 1949. Audiologists will feel an immediate connection to both the display and intuitive control panel while being surrounded by new innovative features. This revolutionary audiometer maintains maximum flexibility in a two-channel audiometer allowing full control in testing procedures for every patient population.

Customizable

Test Type Buttons allow access to protocols that are customized to facility preferences. The AudioStar Pro uses a Configuration Application software to customize preferences for efficient and consistent testing. Auto Play, Auto Score, and Word List "Favorites" ensure seamless integration of the 50+ commonly used word lists included with every AudioStar Pro. The integrated Special Tests including Quick-SIN, BKB-SIN and TEN (HL) address research trends in hearing evaluation. The AudioStar Pro combined with GSI Suite, brings a new level of customized reporting options that addresses the requirements of both the facility and referral sources.

Efficient

Additional features integrated into the AudioStar Pro makes testing every patient even more seamless by configuring pure tone and speech preferences. The built-in auxillary intercom, active microphone during tone presentation as well as remote testing capabilities provide a multitude of options for testing difficult to test patients. The integrated intelligent functionality of activating sound field speakers during hearing aid or cochlear implant testing improves both efficiency and accuracy.

Compatible

The AudioStar Pro addresses the challenges of data management such as patient security and HIPAA compliance through our electronic record solutions: (E-Record Solutions). These solutions safely and easily integrate audiometric data into every facility's data management system from VA, ENT, Private Practice, Hearing Aid, Cochlear Implant and Pediatric facilities.

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For more information, go to www.audiostarpro.com

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Product Specifications

Dimensions and Weight

- W x D x H: 20.1 inches x 14.6 inches x 13.2 inches (LCD raised)
  51.0 cm x 37.0 cm x 33.5 cm
- Height with LCD lowered – 5.5 inches (14.0 cm)
- Weight: 17 lb (7.7 kg)
- Shipping Weight: 27 lb (12.25 kg)
- Power Consumption: 90 Watts

Channels

- Two Independent Channels

Pure Tone – Channels 1 and 2

Frequency Range:

- Air Conduction: 125 Hz to 12,000*** Hz
- High Frequency:* 8,000 Hz to 20,000 Hz (8 kHz, 9 kHz, 10 kHz, 11.2 kHz, 12.5 kHz, 14 kHz, 16 kHz, 18 kHz*** and 20 kHz***)
- Full Frequency Range:* 125 Hz to 20,000 Hz
- Bone Conduction: 250 Hz to 8,000 Hz
- Sound Field:* 125 Hz to 8,000 Hz
- Paired Inserts:* 125 Hz to 8,000 Hz
- Frequency Accuracy: ±1%
- Total Harmonic Distortion:
  - < 2% (earphones and paired insert phones*)
  - < 5% (bone vibrator)

Intensity Range:**

- Air Conduction (TDH 50P): -10 dB HL to 120 dB HL
- High Frequency:* -20 dB HL to 100 dB HL (with Sennheiser HDA 200 Phones)
- Bone Conduction
  - Mastoid: -10 dB HL to 75 dB HL
  - Forehead: -10 dB HL to 65 dB HL
- Sound Field:*
  - -10 dB HL to 90 dB HL (basic speakers)
  - -10 dB HL to 96 dB HL (high performance speakers)
  - -10 dB HL to 102 dB HL (high performance speakers and external booster amplifier)
- Paired Inserts:* -10 dB HL to 110 dB HL
- Masking Intensity Range (Calibrated in effective masking)
  - Narrow Band Noise:
    Maximum dB HL is 15 dB below tone
  - White Noise:
    Maximum dB HL is 30 dB below tone

Signal Format:

- Steady: Tone continuously present.
- Pulsed: Tone pulsed 200 msec ON, 200 msec OFF
- FM: Modulation Rate: 5 Hz
  Modulation Depth: +/- 5%
- Pulsed/FM: Pulsed and Modulated
- Pediatric Noise
- Pediatric Noise Pulsed

Speech – Channels 1 and 2

- Microphone: For live voice testing and communications
- INT/EXT A & INT/EXT B: Can be utilized for internal wave files or recorded speech material from an external digital device

Intensity Range:

- Air Conduction: -10 dB HL to 100 dB HL for TDH 50P (Linear Type 4)
- Bone Conduction
  - Mastoid: -10 dB HL to 55 dB HL
  - Forehead: -10 dB HL to 35 dB HL
- Sound Field:* -10 dB HL to 80 dB HL
- Paired Inserts:* -10 dB HL to 95 dB HL

Masking Intensity Range:

- Speech Noise:
  - Air Conduction: -10 dB HL to 95 dB HL (TDH 50P)
  - Bone Conduction:
    -10 dB HL to 50 dB HL (mastoid)
    -10 dB HL to 35 dB HL (forehead)
  - Sound Field: -10 dB HL to 80 dB HL
- White Noise:
  - Air Conduction: -10 dB HL to 95 dB HL (TDH 50P)
  - Bone Conduction:
    -10 dB HL to 50 dB HL (mastoid)
    -10 dB HL to 35 dB HL (forehead)
  - Sound Field: -10 dB HL to 80 dB HL

Special Tests

- **ABLB or Fowler:** Tone alternating between Channel 1 and Channel 2: Channel 1 is 400 msec ON, 400 msec OFF followed by Channel 2, 400 msec ON, 400 msec OFF.
- **SISI:** An intensity increment is added to a tone in the selected channel for 200 msec, every 5 seconds. The HL increments are in 1, 2 or 5 dB.
- **High Frequency:*** Pure tone testing in the frequency range of 8,000 Hz to 20,000 Hz using circum-aural headphones.
- **TEN:** TEN masking noise will be presented to the test ear. Pure tone stimuli between 500 Hz and 4000 Hz may be used at 1, 2, or 5 dB increments to obtain TEN thresholds.
- **QuickSIN:** Six (6) sentences with five (5) key words per sentence are presented in four-talker babble noise. The sentences are presented at pre-recorded signal-to-noise ratios. The SNR's used are 25, 20, 15, 10, 5, and 0.
- **BKB-SIN:** Contains 18 List Paris. The sentences are presented at prerecorded signal-to-noise ratios that decrease in 3-dB steps. Each list in the pair is individually scored, and the results of the two lists are averages to obtain the List Pair score. Results are compared to normative data to obtain the SNR Loss.

PC Enabled/Stand Alone

- Transfer data to connected PC with an E-Record Solution Software
- Print complete report directly to a compatible USB printer

Special Tests (user defined)

- MLB
- Lombard test
- Pure Tone Stenger
- Speech Stenger
- SAL
- Doerfler - Stewart Test

Communications and Monitoring

- **Talk Forward:** Permits the tester to speak through the examiner microphone into the selected transducer.
- **Talk Back:** Allows the examiner to listen to comments from the patient in the testing booth.
- **Monitor:** The monitor headset or monitor speaker built into the instrument housing may be used by the examiner to listen to Channel 1, Channel 2, Aux intercom, and/or Talk Back signals.
- **Aux Intercom:** The built-in Auxiliary Intercom and assistant headset allows the examiner to speak directly to an Assistant and allows the assistant to hear what is being presented to the patient.
- **On-Board VRA Control:** The built-in VRA controls facilitate fast and simple activation of VRA systems.

Optional Accessories

- Wireless keyboard and mouse
- Gooseneck microphone

Environmental Requirements

- Temperature: +15ºC to 40ºC (59 to 104ºF)
- Relative Humidity: 5% to 90% (non-condensing)
- Ambient Pressure Range: 98 kPa to 104 kPa
- Background Sound Level: <35 dB(A)
- Frequency of Use: Once a year to multiple times per day
- Storage Temperature: -20ºC to + 60ºC (-4ºF to 140ºF)

Quality System

- Manufactured, designed, developed and marketed under ISO 13485 certified quality systems

Compliance/Regulatory Standards

Designed, tested and manufactured to meet the following domestic (USA), Canadian, European and International Standards:

- ANSI S3.6, ANSI S3.43, IEC 60645-1, IEC 60645-2, ISO 389
- UL 60601-1 American Standards for Medical Electrical Equipment
- IEC/EN 60601-1 International Standards for Medical Electrical Equipment
- CSA C22.2 # 601-1-M90
- Medical Device Directive (MDD) to comply with "EC Directive" 93/42/EEC

** Optional configuration*

*** The maximum HL values are applicable to the middle frequencies only*

**** Optional configuration*

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