

*We named it Voyager
because it will take you much
further in modern audiology*

Voyager 522



MADSEN

Voyager

The compact diagnostic audiometer

Designed to save time - in the office or on the road

The Voyager 522 diagnostic audiometer was designed to collect, store, and display test data quickly.

It provides a smooth information flow between your patient and your office information system, with plenty of time-saving conveniences along the way.

Voyager 522 is also easily portable. It's light - just eight kilos, including hard case - and small. And it unpacks and is ready to use in less than a minute, with no cords to untangle.

For today's computerised office - and tomorrow's

Voyager 522 communicates with PCs and desktop printers. Because it's NOAH-compatible, it can feed test information directly into a PC database, and construct audiograms on-screen in real time. You can even connect a desktop printer - any of today's most popular - directly to Voyager 522, for instant printouts with or without a PC. Voyager 522's PC compatibility safeguards it from becoming obsolete as technology changes.



Exclusive memory card - for digital information storage without a PC

Unlike any other audiometer, Voyager 522 contains a digital memory card. The memory card allows you to store test information in the audiometer itself - information that later can be loaded into a PC. This saves important time when you're busy, and frees you from having to bring a PC to remote locations.

Automatic screening and pre-programmed tests

For added efficiency, Voyager 522 allows for fully automatic screening, so you can complete your paperwork while a screening is underway. You can even activate a beeper that alerts you when the screening is finished.

Different users prefer different test procedures. That's why up to five pre-programmed test procedures can be loaded into Voyager 522, and activated with the press of a button.



Voyager 522 audiometer that's computer smart

- ◀ Weighing just 8 kg (including carrying case and accessories), Voyager 522 is the perfect choice for mobile audiology. And it unpacks and is ready to use in less than a minute.

Special tests and speech audiometry

In addition to the automatic screening tests, Voyager 522 can perform the SISI and Stenger special tests (scoring for the SISI test is automatic).

Speech audiometry may be carried out in a sound room - there are connectors for CD or tape input and free-field amplifier - while the optional talkover microphone may be used for live voice testing.

Our commitment to Quality

Madsen has implemented a Quality Management program to ensure that the high quality and unrivalled reliability of our products is maintained. In 1997, we were awarded ISO 9002 certification.

Voyager 522 is especially suitable for busy ENT practices, or other settings where its compact size saves valuable desktop space.



```
Select Special test:
AutoThr Screen.   SISI   S & A
```

Pressing two keys accesses the menu for selecting Special Tests; available tests include Auto Threshold, Auto Screening, SISI and combined Auto Screening and Threshold (S & A).

```
L: Tone Air Freq. Screen.
20 dB View 1000Hz Start S & A
```

Starting the S & A Test runs the Auto Screening Test, and then automatically tests for threshold at those frequencies where there was no response. A beep notifies you that the test is completed.

```
Freq. 250 500 750 1k 1k5 2k 3k Air
dB 10 15 20 NR 15 20 25 Left
```

After completion of automatic tests, responses at each frequency may be viewed (no valid response is stored as NR). Thresholds stored manually in audiology may be viewed likewise.

With Voyager's Audi-Link module installed ▶ in your PC, you can transfer data directly to the NOAH audiology screen as you work.



PC compatibility

Voyager 522 may be supplied with MemCard™ and Audi-Link™ software, and can be directly connected to the COM port of an IBM or compatible PC.

- The optional MemCard software lets you download data from the memory card in Voyager to a PC, and store it in DBF format.
- When installed on a PC with NOAH™, the Audi-Link PC software lets you transfer audiometric data directly from Voyager 522 to NOAH's own audiology screen and patient database.
- Voyager 522 can be customized for you by your Madsen distributor by means of the Convoy™ configuration program.

Technical specifications

Voyager 522



Channels

Two separate channels: one for stimulus and one for masking.

Frequencies

Air, F.F.: 125-250-500-750-1000-1500-2000-3000-4000-6000-8000 Hz.

Bone: 250-500-750-1000-1500-2000-3000-4000-6000 Hz.

Masking

Contralateral; Speech Noise or Narrow Band Noise.

Hearing Level Range

Maximum output is limited by transducer capability.

Typical values are:

Air: -10 to 120-125 dB HL at 500-6000 Hz

Bone: -10 to 70-80 dB HL at 500-4000 Hz

External Inputs

Talkover Mic.: Dynamic or Electret.

CD/Tape 1 & 2: Sensitivity 0.1 - 3.0 VRMS, 47 kOhm.

Outputs

Phones: Air Conduction.

Bone: Bone Conduction.

Insert: Insert Phone for masking.

F.F.: Free-Field Loudspeakers via external Amplifier.

Standard Functions

Tone Switch: Normal or Reverse operation.

Pure Tone: Manual, 1.5 or 3 sec. Tone Duration.

Pulsing Rate: 2.5 Hz.

Warble: Frequency Modulation \pm 5%.

L/R Shift: Automatic left to right switching of all selected parameters, and vice versa.

HL Level Lock: Locking of masking level to stimulus level at any preselected interval.

Interrupter Lock: On/off, internal Tone Switch synchronization.

Special Functions

SISI Test: Interrupt/Reset function (initiated by Tone Switch)

Stenger Test: Binaural Tone Stimulation.

Auto Thr. Hughson & Westlake Auto Threshold Test.

Auto Screen: Automatic Screening Test.

S & A: Combined Auto Screening and Threshold Test.

User Functions

5 user-programmable test setups are stored in NOVRAM. Patient measurement data can be stored on optional memory card.

Memory Card

Capacity: 128 Kb, data for up to 250 patients can be stored on one card (58 x 86 x 7 mm).

Data Interface

Opto-insulated RS232C Serial Interface for connection to PC.

Printer Interface

Centronics Parallel Interface with Opto-insulation.

Display

Alphanumeric Transflective LCD, with CFL backlighting.

Patient Communication

Built-in Talkover amplifier; Visible Patient Response LED.

Standards

Safety: EN 60601-1

EMC: EN 60601-1-2

Audiometer: EN 60645-1, EN 60645-2, ANSI S3.6

Calibration: ISO-389, -3, -4, ANSI S3.6

Languages

Multilingual: English and one user-defined language.

Power Supply

AC 50/60 Hz. 100-120 V \pm 10%; 200-240 V \pm 10%.

Dimensions & Weight

378 (W) x 394 (D) x 110 (H) mm (14.9 x 15.5 x 4.3 in).

Net weight with standard accessories approx. 4.9 kg/10.8 lbs.

Net weight in carrying case approx. 8 kg/17.6 lbs.

Standard Accessories

TDH39 Phones fitted with Noise-Excluding Headset ME70 or TC89E Headband

Patient Response Handswitch

2 Roller Pens (red and blue)

Audiogram Pad

Operation Manual

Optional Accessories

Parallel Printer

Talkover Microphones (lapel or desktop)

PA 210 Power Amplifier

Set of Free-Field Loudspeakers

Bone Conductor B-71 with headband

Masking Insert Phone

Automatic Serial Switch Box

Convoy™ Configuration Software & Manual

Memory Card 128 Kb

MemCard™ PC Software incl. Manual

Audi-Link™ PC Software for Data Transfer to NOAH™

ABS hard-walled Carrying Case

VO 522 Interface Kit (Manual & Cables)

Service Manual

For further information, please contact:

MADSEN
Partners in Hearing Care