

# The MI-5000

The MI-5000B Series II Microprocessor Audiometer is one of the lowest-priced field serviceable microprocessor audiometers available today. It administers computerized tests securing valid, reliable data quickly and cost effectively. It is very easy to understand and use, and can be used either alone, or interfaced with an external printer or computer. Interface settings can be changed by the operator. Tones are generated and controlled entirely by digital circuits, allowing output levels of the MI-5000B to be adjusted by through secured keyboard entry. The LCD display simultaneously shows all thresholds established for both ears, as well as on-going test conditions.

## Features:

- Built in talk over with automatic pause while in use
- 2 in 1 serial port configuration (pin-out compatible with older versions)
- Excellent immunity to low line voltages
- Rugged construction
- Allows for field calibration of output levels
- Three frequency threshold averaging on printouts
- Capability for switching from automatic to manual as needed
- Option to start either ear, and whether to test 8 kHz.
- Starting ear, whether to test 8 kHz and other audiometer parameters can be stored in non-volatile memory
- 'Listening' test controlled by the patient response switch from inside the booth
- Optional automatic shut off after one hour when not in use (selection stored in non-volatile memory)
- Elapsed test time printed on test results
- Flags on printout show which thresholds were determined manually
- Audible alert for end of test and error conditions (toggled active or inactive from front panel)
- Error messages displayed on the screen in easily understood terms
- Pause and Resume capability
- Compatible with numerous hearing conservation software packages
- Complies with OSHA test requirements and qualifies as a microprocessor audiometer



## Specifications:

Test Frequencies: 500, 1000, 2000, 3000, 4000, and 6000 Hz. 8000 Hz is optional.

Frequency Accuracy: Crystal controlled, less than 1% error at all frequencies.

Frequency Sequence: Start either ear, 1000, 500, 1000 retest, 2000, 3000, 4000, 6000, (optional 8000). Second ear, 500, 1000, 2000, 3000, 4000, 6000 (and 8000 optional).

Intensity Range: From 0 dB to 90 dB Hearing Level (HL) in 5 dB steps.

Attenuator Linearity: Less than 0.75 dB error for any 5 dB step, less than 1 dB error for any 10 dB step, less than 2 dB accumulated error relative to the calibration level.

Tone Rise/Fall Times: 44/32 ms typical.

Test Paradigm: Modified Hugheson Westlake in the automatic mode with fully manual override capability.

Testing Time: On a cooperative individual or a biological simulator, approximately 5 ½ minutes (testing 8 kHz.).

### Stimulus Characteristics

A - Pulse train is 1.2 seconds with 50% duty cycle (200 ms on and 200 ms off) with three pulsed tone presentations.

B - Time between tone presentations is varied randomly between 1 and 2 seconds.

C - Patient response window is 1.8 seconds from the beginning of the pulse train.

D - Pulse train terminates when response switch is depressed.

Error Warnings: Audible alert (when active) with visual display of specific error encountered. The following error conditions are detected and signaled.

A - Threshold not established at 1000 Hz, first ear.

B - Retest failure at 1000 Hz.

C - Patient responding when no tone is being presented.

D - Switch not released.

E - Failure to establish threshold within allotted time (pause and alert optional at this error).

Audiometer Calibration: All audiometer calibration parameters will meet ANSI S3.6 1996 Standard for Audiometers and OSHA 29 CFR 1910.95. Output levels are calibrated through secured keyboard entry.

Safety: Listed to UL544 Standard for Medical and Dental Equipment and CSA C22.2 No. 125-M1984 Environment Products/Health Care Technology. Earphone: Telephonics Corporation TDH -49 earphones with MX-41/AR cushions. Power Requirements: 120 VAC, 60 Hz, 32 VA Physical Dimensions: 2.75" high, 7.5" wide, 9" deep. Net Weight: Unit, 2.6 lbs; Earphone, 1 lb; Transformer, 1.2 lbs.

**Standard Equipment:** MI-5000B Audiometer with RS-232 output and internal talkover / Earphone Assembly / Patient Response Switch / Power Supply / Patch Cords (2) Operator Manual