



ES3

Pure Tone Audiometer

Short-Form User's Guide

Rev 1.11



Micro Audiometrics
C O R P O R A T I O N

KEY USAGE

ES3 models have a blue keypad/overlay with 10 keys (1 through 0). All 10 digits are available for entering time, date, and ID numbers.

Key presses appear in { }; e.g. {▲} means press the ▲ key. Basic menu navigation is done using {▲} / {▼} and {◀} / {▶}.

The 0 key is in the center of the navigation key array. {0} is used to **present tones** and to **select menu items**.

Menu sequences appear as ◀MENU1 ◀MENU2 ◀MENU3. The "◀" means "scroll to Menu Item and {0}" or "press the numeric key corresponding to the Menu Item".

When 'actions' or 'toggles' are displayed on the bottom line of the LCD, the row of keys just below the display are used as 'function' keys to perform an action, or to toggle between two possible parameter values.

RESPONSE ERRORS (AUTOMATIC THRESHOLD)

Button Held	Patient is holding down response button.
False Response	Patient pressed response button outside valid response "window" or when a tone was not being presented.
Inconsistent Results	Determination of a valid threshold failed during an automatic threshold exam. The exam stopped at the point where the error occurred.
Validity Error	The 1k and 1k/V thresholds differ by more than 5 dB.

QUICK CHECKS

At power-up, the ES3 logo should scroll onto the **LCD**, appear quickly if scrolling is disabled, or not appear at all if ES3 was last powered down due to an inactivity timeout. The backlight should be on. The ES3 should prompt for selection of an option (New Test or Load Last Results), accept input, and display the **manual audiometry** screen.

Keypad operation can be tested by pressing keys to see if the appropriate response occurs. The speaker should produce audible key press 'ticks' (menus only).

Set frequency to 1000 Hz and level to 70 dB HTL. Press {0} and a tone (pulsed or continuous) should be heard at a comfortable loudness level at the correct ear. Press {▲} {0} and {▼} {0} to verify that signal loudness increases or decreases, respectively. Press {2} {0} and verify that the signal is presented to the other ear.

Plug in a **response button** and verify that pushing the button causes "*" to appear near the center of the display.

Enter menu sequence ◀SETUP ◀DATE ◀SET TIME and verify that time is correct and that seconds count is incrementing.

Attach **printer**, verify that printer output is selected via menu sequence ◀SETUP ◀COMMUNICATIONS ◀DEFAULT OUTPUT, and transmit data to printer via ◀Send Data.

MENU TREE (FROM TOP LEVEL MENU)

1-Audiometry	Enter Manual Audiometry Mode
2-Display Results	Display audiometric test results
3-Demographic Info <ul style="list-style-type: none"> . 1-Patient ID . 2-Age . 3-Gender . 4-Last Noise Exposure . 5-Operator ID 	Enter patient demographic data <ul style="list-style-type: none"> . Up to 21 digits . 1 to 99 . Male, Female . 0 to 99 hours . Up to 21 digits
4-New Test	Begin a new test
5-Files <ul style="list-style-type: none"> . 1-Save Test . 2-Load Test . 3-Load Baseline . 4-Mark Baseline Test . 5-Send All Files 	SD card data file access <ul style="list-style-type: none"> . Save audiometric test data . Load audiometric test data . Load audiometric baseline data . Mark test as a baseline test . Send all saved test records to a PC
6-Send Data	Transmit test data via serial port
7-Setup <ul style="list-style-type: none"> . 1-Audiometry Setup <ul style="list-style-type: none"> . . 1-Frequencies . . 2-Manual Audiometry <ul style="list-style-type: none"> . . . 1-Ear . . . 2-Starting Level . . . 3-Starting Frequency . . . 4-Tone Mode . . . 5-Increment Amount . . . 6-Decrement Amount . . . 7-Binaural Stimulus . . 3-Auto Threshold <ul style="list-style-type: none"> . . . 1-Ear . . . 2-Frequency Order . . . 3-Starting Level . . . 4-Increment Amount . . . 5-Decrement Amount . . . 6-Gross Increment . . . 7-Gross Decrement . . . 8-Miscellaneous <ul style="list-style-type: none"> 1-Level Override 2-Faster Method 3-Stop On Inc. 4-Max Presentations 5-Use Baseline 6-1kV Test Both Ears 7-Max False Responses 8-Asc Responses Req . 4-Impairment Calc. . 2-Communications <ul style="list-style-type: none"> . . 1-Default Output . . 2-Baud Rate . . 3-Insert Linefeed . . 4-Auto Send Data . 3-Date	Setup user options <ul style="list-style-type: none"> . Audiometry options <ul style="list-style-type: none"> . . Select from list . Manual audiometry options <ul style="list-style-type: none"> . . Left / Right . . 10 / 15 / 20 / 25 / 30 / 35 / 40 . . Select from list (1000) . . Pulsed / Continuous . . 5 / 10 / 20 . . 5 / 10 / 20 . . No / Yes . Automatic threshold options <ul style="list-style-type: none"> . . Left / Right / Better ear . . Select from list . . 10 / 15 / 20 / 25 / 30 / 35 / 40 . . 5 / 10 / 20 / 30 . . 5 / 10 / 20 / 30 . . 5 / 10 / 20 / 30 . . 5 / 10 / 20 / 30 . . Other automatic threshold options <ul style="list-style-type: none"> . . . 40 / 45 / 50 / 55 / 60 / 65 / 70 . . . No / Yes . . . No / Yes . . . 15 / 20 / 25 / 30 / 35 / 40 . . . No / Yes . . . No / Yes . . . 1 / 2 / 3 / 4 / 5 / 10 . . . 1 / 2 / 3 / 4 / 5 . . AAO-79, AAO-65, AMA-1947, NIOSH, CHABA, Illinois, New Jersey, Wisconsin . Serial communications options <ul style="list-style-type: none"> . . Printer / Computer . . 9600 / 28.8 / 57.6 / 115.2 . . No / Yes . . No / Yes . . Date options

<ul style="list-style-type: none"> . . . 1-Set Date Format . . . 2-Set Date . . . 3-Set Time Format . . . 4-Set Time . 4-Power <ul style="list-style-type: none"> . . . 1-A/C <ul style="list-style-type: none"> 1-Backlight 2-Power Down . . . 2-Battery <ul style="list-style-type: none"> 1-Backlight 2-Power Down . 5-Display <ul style="list-style-type: none"> . . . 1-Contrast . . . 2-Brightness . . . 3-Scroll Logo . 6-Beep Volumes <ul style="list-style-type: none"> . . . 1-Key Volume . . . 2-Alert Volume . 7-General <ul style="list-style-type: none"> . . . 1-Calibration Dates . . . 2-Perform Calibration <ul style="list-style-type: none"> 1-Calibrate Primary <ul style="list-style-type: none"> 1-Headset Type <ul style="list-style-type: none"> 2-70 dB HTL 3-85 dB SPL 4-Calibration Date 5-Audiometer Test 6-Send Data 2-Calibrate Secondary <ul style="list-style-type: none"> 1-Headset Type <ul style="list-style-type: none"> 2-70 dB HTL 3-85 dB SPL 4-Calibration Date 5-Audiometer Test 6-Send Data 3-Headset for Testing 4-Language 5-Earscan 3 Info. 6-Lock Settings 8-Reset Settings 	<ul style="list-style-type: none"> . . . MM/DD/YYYY or DD/MM/YYYY . . . Enter date (use current date format) . . . 24 Hour / 12 Hour . . . Enter time (use current time format) . Power handling options <ul style="list-style-type: none"> . . . When operating on A/C or USB power <ul style="list-style-type: none"> Never / 30 sec / 1, 2, 5 min Never / 1, 5, 15, 30 min / 1 hour . . . When operating on battery power <ul style="list-style-type: none"> 5, 10, 20, 30 sec / 1 min 15, 30 sec / 1, 2, 5 min . Display setting options <ul style="list-style-type: none"> . . . Adjust as desired . . . Adjust as desired . . . No / Yes . Volumes for key 'tick' and audible alerts <ul style="list-style-type: none"> . . . Low / Medium / High . . . Low / Medium / High . Other options and information <ul style="list-style-type: none"> . . . Display last calibrated and due dates . . . Password protected <ul style="list-style-type: none"> Primary headset calibration options <ul style="list-style-type: none"> TDH-39 / EAR-5A <ul style="list-style-type: none"> Set target level to 70 dB HTL Set target level to 85 dB SPL Set cal date to current? Yes / No Tone "On" calibration test mode Transmit cal data via Serial Port Secondary headset calibration options <ul style="list-style-type: none"> TDH-39 / EAR-5A / None <ul style="list-style-type: none"> Set target level to 70 dB HTL Set target level to 85 dB SPL Set cal date to current? Yes / No Tone "On" calibration test mode Transmit cal data via Serial Port Primary / Secondary <ul style="list-style-type: none"> English / TBD Displays information screen Password protected . Yes / No
8-Turn Off	Turn instrument off

TEST STORAGE (OPTIONAL UPGRADE)

The ES3 assumes that files are stored in a directory called 'Earscan3', and that this directory contains subdirectories with names corresponding to patient ID's. Each patient directory contains audiometric test results with file names based on the test date. For the path \\Earscan3\1234567890\01-24-2004.e3a, the **patient subdirectory** is **1234567890** and the **test data file** is **01-24-2004.e3a**.

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