

# FONIX 6500-CX Hearing Aid Test System

## ACOUSTIC DRIVE SIGNAL

**Frequencies:** 100 Hz through 8000 Hz in 100-Hz intervals. Accuracy within 1 percent. Frequencies used in sweep presentation are from 200 to 8000 Hz only.

## COMPOSITE MODE AMPLITUDES:

**Flat or White Noise Weighting:** Each frequency component, 30 through 80 dB SPL; (total signal, 49 through 99 dB SPL RMS) in 5-dB steps.

**Speech Weighting:** Response has flat amplitude for low frequency components; a slope of -6 dB/octave starts at 900 Hz, which is 3 dB down. Amplitude from 40 through 90 dB SPL RMS, in 5-dB steps.

## SINE MODE AMPLITUDES:

**Amplitude Accuracy:** 50 through 100 dB SPL in 5-dB steps. After leveling, all amplitudes accurate to within 1 dB from 300 to 5000 Hz; all others within 3 dB.

## CREST FACTOR

**Composite Mode Signal:** Less than 12 dB (4 to 1 ratio of peak to RMS value).

## TELECOIL DRIVE

10 and 31.6 mA/meter, or telewand in Coil modes.

## DIGITAL READOUT OF SOUND PRESSURE LEVEL

**Frequency Range:** 100 through 8000 Hz.  
**Amplitude Range:** From 0 through 149 dB (-90 through +150 dB gain).

**Resolution:** 0.1 dB.  
**Type:** True RMS.  
**Accuracy:** Within 1 dB plus or minus 1 digit from 300 to 5000 Hz; within 2 dB plus or minus 1 digit for all other frequencies.

**Noise Immunity:** 2.5 dB.  
**SPL Equivalent Input Noise:** Less than 50 dB RMS  
**Noise Reduction:** Averages the measured signal in synchronism with the signal generator by the factor chosen. Factors of 2, 4, 8, and 16 available. Random noise will be reduced by an amount equal to the inverse of the square root of the factor chosen.

## SPECTRUM MODE AVERAGING

Uses the Noise Reduction button to control the Spectral averaging in Spectrum Mode from 2 to 16.

## BATTERY CURRENT MEASUREMENT

**Range:** 0 to 20 mA.  
**Accuracy:** Within  $\pm 3\%$  of full scale.  
**Resolution:** 0.01 mA.  
**Voltages supplied:** 1.5 (silver), 1.3 (zinc air). See Appendix B, ANSI S3.22-1987.

## HARMONIC DISTORTION ANALYZER

**Type:** Selectable for 2nd, 3rd, Total (2nd plus 3rd), or none.  
**Resolution:** 0.1 percent.  
**Reading:** Percent (%) with respect to total signal. Pure tone readings made at 100-Hz intervals from 400 through 2500 Hz.

## ATTACK/RELEASE TIME

**Range:** 2 to 5000 mSec.  
**Accuracy:**  $\pm 10\%$  or 2 mSec + Resolution, whichever is larger.  
**Resolution:** 2000-8000 Hz: 1.25 mSec;  
800-1600 Hz: 2.5 mSec;  
400, 500 Hz: 5 mSec.  
100 to 300 Hz and Composite: 10 mSec.  
**Available Test Modes:** Star Option: Enhanced, Adaptive  
ANSI 96, ANSI 87, IEC  
**Signal Durations:** All modes: 2000 mSec  
Adaptive: 2 Sec, 0.1 Sec (Attack)  
ANSI 96: variable (500 to 5000 mSec)

## PRIMARY POWER

Selectable for 100, 120 or 240 VAC (within 10 percent), 50/60 Hz. Power requirement is 50 watts.

## ELECTRONICS MODULE

**Color:** Ivory module case with dark grey front panel. Black trim and buttons.  
**Size:** 17.5"W x 6.5"H x 14.75"D (44.5 x 16.5 x 37.5 cm).  
**Weight:** 20.5 lbs.(9.5 kg).

## VGA VIDEO MONITOR

**Display Format:** 320 pixels wide x 210 lines high.  
**Display Refresh Rate:** 60 Hz.  
**Display Color:** Red, Green & Blue or Monochrome (Black & White)  
**Power:** 115 VAC, 50 or 60 Hz. (230 VAC optional).  
**Color:** Light gray  
**Size:** 14" diagonal (35.5 cm)  
**Weight:** 27 lbs. (13.2 kg).

## TEST CHAMBER

**Type:** FONIX FC 6050.  
**Test Area:** Greater than 6" x 6" x 1.5" deep (15.5 x 7.5 x 4 cm).  
**Internal Acoustic Reflections:** SPL at test point will change less than 3 dB above 1 kHz, when lid is raised (without feedback compensation).  
**Ambient Noise Isolation:** 45 dB at 1 kHz (allows THD measurement to within 3% at 60 dB source level and a 60 dB ambient).  
**Color:** Light gray with black trim. Black and white test area.  
**Size:** 13.5"W x 18"H x 11.5"D (934.3 x 45.7 x 29.2cm).  
**Weight:** 33 lbs. (15 kg).

## SHIPPING

**Total Shipping Weight with Quik-Probe Option:** 130 lbs. (59.5 kg)  
**Total Shipping Weight without Quik-Probe Option:** 112 lbs. (51 kg)

## STANDARD ACCESSORIES

**FONIX M1550E Low Noise Microphone:** 14 mm diameter, high voltage, pressure type Electret. 149 dB maximum SPL.  
**Microphone Adapter:** (044-1006-01) 14mm to 1" (25 mm).  
**HA-1 Coupler:** (044-1003-03) Dimensions per requirements of ANSI S3.7-1995 for testing all-in-the-ear aids and earmolds.  
**HA-2 Coupler:** (044-1001-04) Dimensions per requirements of ANSI S3.7-1995 for testing ear level, eyeglass and body aids.  
**Ear Level Adapter:** (044-1007-00) Per requirements of ANSI S3.22-1996 for adapting ear level aids to the HA-2 coupler.  
**FC6050 Test Chamber Cable:** (119-0204-07)  
**Battery Pills** #13: (059-2005-02) #675/76: (059-2004-02)  
#312: (059-2006-02) #10A/230: (059-2010-01). All with 12" cables—24" cables available upon request. (010-0003-01)  
**Operator's Manual:**

## OPTIONAL ACCESSORIES

**6 CC Coupler:** (044-1004-03) NBS 9A, for checking audiometer headphones.  
**Test Chamber Stand:** (030-1003-00) Tubular steel stand which brings the testing area or the test chamber to convenient table height.  
**Quest QC-10 Sound Level Calibrator:** (030-0004-00) For calibration of microphone amplifier. 1 kHz, 114 dB SPL.  
**Telewand:** (043-1045-02) For checking response of aids in "telephone" mode.  
**Telecoil Induction Loop:** (120-1001-00) For checking hearing aid response to a magnetic loop field.  
**Battery Pills:** #AA: (059-1011-00); #41: (059-2009-02); #5: (059-2008-01). All with 12" cables—24" cables available upon request.  
**Maintenance Manual:** (010-0002-00) On request at time of purchase.

## SAFETY

UL544 and IEC 601-1 approval available when used with hospital grade CRT monitor. Specify when ordering.

 medical device directive.  
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## GUARANTEE

The FONIX 6500-CX and its accessories are guaranteed to be free from manufacturing defects which would prevent the products from meeting these specifications for a period of one year from date of purchase.



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