FONIX 7000 and 6500-CX Comparison

The FONIX 7000 test system is part of the next generation of hearing aid analyzers from Frye Electronics. Meant to replace the 6500-CX, it was designed to have the testing capabilities of the 6500-CX combined with an easy-to-use interface flexible enough to accommodate future innovations.

Here is a listing of the advantages of the 7000:

- Improved user interface with function keys instead of the 6500's fixed buttons.
- Higher resolution display with more colors
- LCD flat panel monitor
- Larger, faster thermal printer
- Parallel external printer port
- Higher accuracy in attack & release measurements
- Redesigned M1750E coupler microphone
- Redesigned 7020 sound chamber (same as the 6500-CX's new 6050 sound chamber model)
- Field-upgradable through RS232 (no more ROM swapping)

Although one of our goals for the 7000 test system is to have all the testing capabilities of the 6500-CX, we still have a few things that need to be added. Here is a listing:

- Coupler targets in the Real-ear mode
- Advanced & Enhanced Attack & Release measurement screens (attack & release measurements are included in the ANSI test screens)
- Separate Battery Current screen (battery current measurements are available in the ANSI and Coupler Multi-curve screen)
- The ability to subtract measurement curves and save reference curves
- NAL-NL1 and DSL I/O fitting formulas

The following table shows a comparison of some of the specifications.

Source	7000	6500-CX
Manual sine frequencies	200 Hz through 8000 Hz 100 Hz intervals	100 Hz through 8000 Hz 100 Hz intervals
Sine sweep frequencies	200–8000 Hz 1/12 Octave nearest 100 Hz interval	200–8000 Hz 100 Hz intervals 15 frequencies omitted
Source Types	Composite (FP40-style chirp or 6500 noise), sine, or Digital Speech in Noise with choice of flat, ANSI, or ICRA weighting, available in coupler and real-ear screens. Polarity / group delay signals available in Enhanced DSP screen. Three choices of pure-tone sweeps.	Composite, sine, or Digital Speech in Noise, with choice of flat, ANSI, or ICRA weighting depending on screen. Polarity / group delay signals available in Enhanced DSP screen.
Telecoil output	1.00, 1.78, 3.16, 5.62, 10.0, 17.8, 31.6, 56.2, and 100 mA/m ANSI 3.22, 1996 with telewand	10 mA/m, 31.6 mA/m Other levels with external box ANSI 3.22, 1996 with telewand
Chamber output	40–100dB, all supported source types.	40–100dB, depending on source type. (49–99dB flat weighted composite, 40–90 dB ANSI and ICRA weighted, 50–100dB puretone)

Table continued

Harmonic distortion analyzer	7000	6500-CX
Resolution	0.1 %	0.1 %
Frequency range	200–2600 manual 400–1900 sweep	400–2500 manual 400–1900 sweep
Accuracy	within 10%	within 10%
Attack & release		
Measurement Range	1–5000 mS	2–2000 mS
Accuracy	10% or 2 mS, whichever is larger	10% or 2 mS, whichever is larger
Resolution	1 to 5 mS depending on freq.	1.25 to 10 mS depending on freq.
Attack and Release Stimuli	Pure tone at 250, 500, 1000, 2000, 4000 Hz (all other puretone measurements from 50-8000Hz on 50Hz intervals available upon completion of attack and release screen, composite shortly thereafter.)	Pure tone at 100, 200, 300, 400, 500, 800, 1000, 1600, 2000, 3200, 4000, 6400, 8000 Hz and Composite
Power		
Source voltage	100–240 VAC auto-switching, 50–60Hz	100, 120, 230, or 240 VAC manually-selected, 50–60 Hz
Power	50VA	50VA
Display		
Format	640 x 480	320 x 210
On-screen Colors	16	5
Internal printer		
Type	Thermal	Thermal
Paper width	4.41" (112 mm)	2.36" (60 mm)
Speed	~80 mm/s	~30 mm/s
Dot structure	832 dots/line	320 dots/line
Printed Pixel resolution	~100dpi	~45dpi
External printer		
Type	HP compatible (HPCL5) Epson (ESC-P2)	HP compatible (HPCL5)
I/O ports		
Video	VGA	VGA
External Printer	Parallel	Serial
Probe mic.	Yes	Yes
Insert Earphone (ER3)	Yes	No
Sound field speaker	Yes	Yes
Coupler mic.	Yes	Yes
Monitor headphones	Yes	Yes
Scope Monitor	Yes	Yes
Sound chamber		
Test area	7" x 7" x 1.5" deep	6" x 3" x 1.5" deep (FC6020)
Ambient noise isolation	45 dB @ 1000 Hz	45 dB @ 1000 Hz
Safety	EN 60601-1	EN60601-1, UL544
EMC	EN 60601-1-2	EN 60601-1-2

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