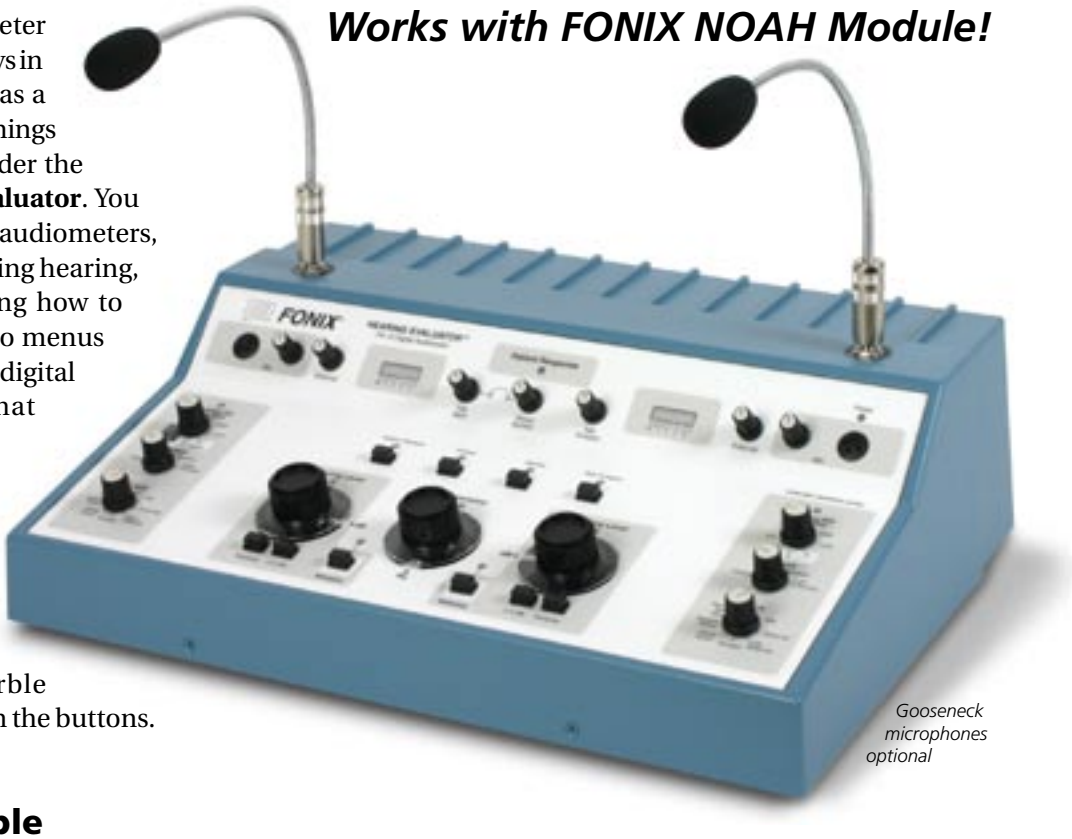
The FONIX® Digital Hearing Evaluator™

The Modern Audiometer for Dispensers

When you want an audiometer that is very easy to use, stays in calibration beautifully, has a great repair record, and does all the things you want it to do, you should consider the **FONIX FA-10 or FA-12 Hearing Evaluator**. You can walk right up to either of these audiometers, and if you know anything about testing hearing, you won't have any trouble learning how to use it. No clicking on this or that. No menus or sub-menus. The audiometers are digital inside, and that is one reason that they stay in calibration so well. But the interface consists of knobs and buttons that are straight forward and easy to use. Need masking? Select the type you want with a knob. Narrow band, white noise, and speech noise are available. If you want to warble and/or pulse the pure tone, just push the buttons. No problem.

Works with FONIX NOAH Module!



Gooseneck microphones optional

Dual Calibration Available

With more and more people using insert earphones, we are delivering many audiometers with inserts only. However, we still deliver units with the conventional headphones, and we can produce a unit with dual calibration so you can use whatever transducer is appropriate for the circumstances.

NOAH 3 Compatibility

The ability to connect to a computer is added when the RS232 Option is included with the audiometer. Use the FONIX NOAH Module to remotely perform most audiometric measurements from NOAH. You can turn on the stimulus and select the frequency, amplitude, input, output, and hearing aid simulator selections from the NOAH window. Alternately, put the FONIX NOAH Module in Listen mode to establish a real-time connection with the audiometer. When in this mode, the graph on the NOAH screen updates test results with the current frequency and amplitude selections on the audiometer whenever the stimulus button is pressed. This is great for those users who prefer the knobs and dials on the audiometer but who enjoy the convenience of the computer connection to automatically record test results. The FONIX NOAH Module has been officially certified by HIMSA!

More Standard Features

Hearing Simulator

The Hearing Simulator lets your client listen to up to four different frequency responses.

Special Tests

Included: Stenger, ABLB, MLB and SISI*

Built-in Microphone

Use the built-in microphone for speech testing and talk over functions.

Unusually Complete Monitor Function

When you purchase the optional stereo monitor headset, the boom microphone/headset accessory, or the monitor speakers, you can hear all signals that reach the client's ear in your corresponding ear. Controls on the Hearing Evaluator allow you to set these signals at a comfortable level. And if you use a

* Alternate Binaural Loudness Balance
Monaural Loudness Balance
Short Increment Sensitivity Index

talkback microphone, you will, of course, also hear your client's voice through your monitor. If your client presses the optional patient response switch, you will hear a click/tone in your monitor headset. (The patient response LED on the Hearing Evaluator will also light up.)

Custom Lightweight Sound Field Speakers

The optional high-efficiency sound field speakers also fit into the carrying case and add very little weight. It is not necessary to purchase an additional amplifier for these speakers. The amplifier in the Hearing Evaluator will drive them to 85 dB HL at 1000 Hz when the client is located three feet from the speaker. Each sound-field frequency can be independently calibrated in HL.

Clinical Office Package Available

We have gathered a number of the most requested optional accessories into a money saving package we call our Clinical Office Package.

- Boom Microphone & Monitor Headset, or choose Gooseneck Microphones and Monitor Headset
- Talkback Microphone
- Desktop stand for talkback mic
- Dust Cover
- Patient Response Switch
- 2 Sound Field Speakers & 10 ft. cables
- 2 Speaker Wall Mounts
- 7 Patch Cords, 1/4" to 1/4" plug—6 ft. long

World-Wide Use

FA-10 and FA-12 are identical units except that the FA-12 has a plus **10 dB button**, while the FA-10 has an **Output Reverse button** so that the operator can use the same hand when conducting tests on both the right and left ear. Since the audiometer standards are the same for both ANSI and ISO, it is only necessary to tell us which instrument you want and specify the voltage.

Specifications

ANSI Audiometer Classification: Type 3A

Input Power:	105V – 130V or 220V 50-60 Hz	
Weight:	11 lbs (5 kg) without accessories	
Size:	18.25" x 13.5" x 5.5" (45.6 x 33.8 x 13.8 cm)	
Frequencies: (air & speaker)	125, 250, 500, 750, 1000, 1500, 2000, 3000, 4000, 6000, 8000	
(bone)	250, 500, 750, 1000, 1500, 2000, 3000, 4000, 6000, 8000	
Frequency Accuracy:	within 1%	
Air Conduction Distortion:	Less than 3% THD (acoustic) when measured at the following HL levels: 125 Hz–75 dB; 250 Hz–90 dB. 500–6000 Hz–10 dB; 8000 Hz–90 dB.	
Cross Talk:	-70 dB or better between channels.	
Minimum Amplitude Range: (air)	125 Hz	-10 to 75 dB HTL
(Telephonics TDH39) 100 Ohms	250 Hz	-10 to 90 dB HTL
	500 Hz to 6 kHz	-10 to 110 dB **HTL**
	8 kHz	-10 to 90 dB HTL
(bone) (Radioear B-71) 100 ohms	250 Hz	-10 to 40 dB HTL
	500 Hz to 750 Hz	-10 to 60 dB HTL
	1 kHz to 3 kHz	-10 to 70 dB HTL
	4 kHz	-10 to 60 dB HTL
	6 kHz	-10 to 40 dB HTL
	8 kHz	-10 to 30 dB HTL
(speaker) (one speaker driven) 8 ohms	125 Hz	-10 to 50 dB HTL
	250 Hz	-10 to 70 dB HTL
	500 Hz	-10 to 80 dB HTL
	1 kHz to 6 kHz	-10 to 85 dB HTL
	8 kHz	-10 to 80 dB HTL

Phones: ANSI S3.6—1996 / IEC 645-1
Bone: ANSI S3.6—1996 / IEC 645-1

Attenuator Range and Resolution: -10 TO 110 dB HTL in 5-dB steps.
An additional -2.5 dB of setting is available by pressing the 2.5 dB button.

Attenuator Accuracy: Maximum error at any one attenuator setting is ±1.5 dB.
Error between any two adjacent settings will be less than .75 dB.

Warble Tone: 10% frequency deviation at a modulation frequency of 5 Hz (±1/2 Hz).

Pulsed Tone: Pulse frequency is 2.5 Hz (±1/2 Hz). 50% duty cycle (±20%).

Noise Generator:
White Noise: flat (±2 dB) to 8 kHz
Speech Noise: weighted random noise with a sound pressure spectrum density constant from 250-1000 Hz, falling off at a rate of 12 dB/octave from 1000 to 4000 Hz, within ±5 dB.
Narrow-band masking noise: as defined in ANSI 3.6 – 1989.

Channel Inputs:
Tone: pure, pulsed pure, warble, pulsed warble.
Speech Microphone: with adjustable gain control.
Noise: Speech, narrow band, or white.
External: 100K input impedance. Min signal = 100 mV RMS. Max signal = 8 volts peak.

VU Meters: Each channel with LED bar graph. Range from -20 to +3 dB VU.
Accuracy: ±1 dB at 0 dB ±2dB at -10 & -20 dB.
Live voice characteristics as described in ANSI C16.5-1954 —(R1971) specifications for a VU meter, Sections 3.2 to 3.5 inclusive.

Channel Outputs:
Speaker: (One channel driven): Four watts RMS typical into 8 ohm sound field speakers (optional).
Earphones: Telephonics TDH39P: 100 ohm.
Bone Vibrator: (Radioear B-71 or equivalent): 100 ohm.

Opposite Channel Routing: Left or Right channel output can be routed to opposite channel's output device. Accuracy is ±2 dB.

Speech Microphone: Internal and external (optional)
Frequency Response: ±5 dB from 250 Hz to 4 KHz. Does not differ from that at 1000 Hz by more than ±5 dB, and does not rise at any frequency outside this band by more than 10 dB relative to the level at 1000 Hz.

Sound Field Speaker: ±7.5 dB from 250 Hz to 4000 Hz. Greater than 90 dB SPL output at 3 feet (one meter) with 3 watts RMS input at 1000 Hz at a 45 degree azimuth.

Stereo Monitor Earphones: Stereo with volume control; both audiometer channels are monitored along with talkback microphone and patient response switch (tone).

Talk Back: level adjustable independently.

Talk Forward: When 'Talk Forward' button is pressed, the output (adjustable) of the right speech microphone is switched into the outputs of both audiometer channels. Maximum talk forward level is 90 dB HTL or the maximum output of the selected transducer, whichever is less.

Hearing Aid Simulator: In addition to a flat response, "hearing aid" responses are available: Flat, slopes of -6 dB, -12 dB, -18dB, HFE.

Optional RS232 Computer Interface Allows remote control of almost all aspects of audiometer operation.

Special Tests SISI, ABLB, MLB.

IEC 60601-1 **ISO-13485**

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