The FONIX® FP40 Composite Option

The very capable FP40 only gets better with the addition of the composite signal package. Get real time testing, the ability to test high end digital aids, and the automated ANSI S3.42-1992 test sequence all in one package!

The Composite Signal
With simultaneous presentation of 79 frequencies, the real time composite test of a hearing aid updates the test display several times a second. The composite signal means you don’t have to waste valuable time with your patient waiting for a pure tone swept test. Instead, you can see instant results on the screen even as you’re making adjustments to the hearing aid—this can be especially useful when adjusting programmable hearing aids.

Intermodulation Distortion Display
Another advantage of the composite signal is the display of intermodulation distortion. If the curve begins to “break up,” you know that there is intermodulation distortion and you are overdriving the hearing aid.

Avoids “Artificial Blooming of the Lows”
It has been demonstrated that a pure tone test of an AGC aid will show more gain in the lower frequencies than is actually there. The composite test, being a complex signal that does not put all the energy at one frequency, does not have this problem and is a more accurate test.*

ANSI S3.42 Test Sequence
This standard calls for a test sequence using the composite test. It is included in all units with the Composite Option. The fact that the ANSI committee published such a standard indicates industry acceptance of this signal.

Spectrum Analysis—Use Real Speech
When you get the Composite Option, you get the ability to use other signals, particularly live voice. Go to spectrum mode and you can then use any other signal and see how the hearing aid handles it. It is particularly useful to have the “significant other” of the patient speak while in the probe mode with the target on the screen. They can step up and back and see how the hearing aid handles the change. Recorded voices or other stimuli could also be used.

Digital Speech
When you get the Composite Option, you also get a variation of it called Digital Speech. Digital Speech is an interrupted composite signal for testing noise-reducing digital hearing aids such as the Widex Senso and the Siemens Prisma. These hearing aids reject any continuous sound they hear as “environmental noise,” and lower the gain at the offending frequencies.

Digital Speech is used, it makes the hearing aid respond as it would when only speech is being heard.

There are actually three speech signals included with the Digital Speech option. Each signal is an interrupted composite signal for testing digital hearing aids. The difference between them is the spectrum each uses: the ANSI, ICRA, and LTASS spectra. The ANSI spectrum is the same as in the normal composite signal. It has a very smooth, soft rolloff of the high frequencies. The ICRA (International Collegium of Rehabilitative Audiologists) spectrum was specially requested by Widex as a test for the Senso; it rolls off the high frequencies much more quickly than the ANSI spectrum.

These first two spectra are available in normal sound chamber tests and in non-DSL probe measurements. The third spectrum is called the LTASS (long term average speech spectrum) and was specially requested by the University of Western Ontario for use with their DSL fitting software which is built into FP40s with the probe option. All of this means that the Digital Speech signal is flexible and can be changed to fit the testing method for which you most need it.

**ANSI S3.42-1992 Automated Test Sequence**

Included with purchase of the Composite Option is the ANSI '92 automated test sequence. The ANSI S3.42-1992 standard was developed for realistic testing of nonlinear hearing aids. It's not an FDA requirement, but it's very useful in determining the real life characteristics of the aid. It quickly gives you a family of five composite gain curves at 50dB–90dB or 40dB–80dB in 10 dB steps, a full-on gain measurement, and an I/O curve. So you can make sure that all the compression circuits of the nonlinear hearing aid are working correctly, and you can see how the aid performs with a speech-like signal.

**Also available: The Profiler Option**

Once you purchase the composite option, you can also choose to add the Profiler automated test sequence. The Profiler was originally based on the ANSI '92 standard, but it takes it several steps further: it was designed to give you an overall picture of the hearing aid in less time than it takes to set the aid up in the sound chamber (about 45 seconds). It gives you: three speech curves at soft, medium, and loud levels, average overall gain, equivalent input noise, maximum output, reserve gain, battery current drain, OSPL 90, and harmonic distortion. Together, these measurements give you a pretty clear picture of the characteristics of the hearing aid.

The Profiler is great for newly programmed hearing aids... after you program the aid, just pop it in the test box and make sure it’s performing exactly the way the programmer says it’s performing. Then print out the results and keep it as a record, so if the customer brings it back for repair, you can run the test again and compare the results. It’s also great for the “mystery” aids that a client might occasionally bring in. Run the Profiler on it, and then show your client the results and why he might want to repair or replace it with a new aid.

The Composite Option, the Digital Speech signal, the ANSI '92 test sequence, and the Profiler Option make the FONIX FP40 and FP40-D Hearing Aid Analyzers powerhouses of accuracy and efficiency. In the end your clients benefit from improved hearing provided in a pleasant and cost-effective manner.