

# REAL-EAR TESTING OF OPEN FIT HEARING AIDS

Open Fit hearing aids are easily concealed and comfortable, providing moderate amplification without the occlusion typically encountered with more traditional hearing aids. This has made them extremely popular in the past few years.

In order to maximize the amount of gain possible with this style of hearing aid, hearing aid manufacturers have developed advanced feedback control technology. Unfortunately, this technology can interfere with hearing aid testing. FONIX hearing aid analyzers (FONIX 8000, 7000, and FP35) have been updated in order to provide accurate measurements of these hearing aids.

In order to perform accurate real-ear measurements of open fit hearing aids, incorporate the following into your test protocol:

**Step 1:** Use Digital Speech: The Digital Speech signal has been updated with a new averaging method and new timings to take into account issues encountered with Open Fit hearing aids. Choosing Digital Speech as your test signal will automatically enable these updates.

disabling the reference microphone will have no effect on leveling, which also uses the reference microphone. Leveling ignores this setting and always uses the reference microphone.

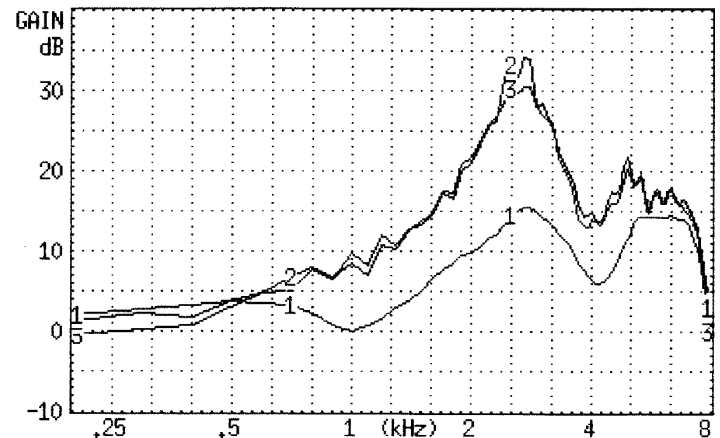


Figure 2: Curve 1 is the REUG, Curve 2 is the REAG with the reference microphone on, and Curve 3 is the REAG with the reference microphone off.

**Step 3:** Adjust the timings of the Digital Speech signal. This step is optional and will probably not be needed for most hearing aids.

On the 7000 and 8000 analyzers, do this by changing the “Aid Group” setting in the local menu. “Adaptive” is recommended for most Open Fit hearing aids, although there may be some cases in which you get better results with the “Standard/Linear” or “AGC” settings.

On the FP35, adjust the “Speech Burst Time” setting. This directly controls the amount of time the modulated signal stays “on” before the measurement is taken. Some hearing aids may need more time while other hearing aids may need less. This is an advanced setting available only when the USER LEVEL is set to ADVANCED in the Default Settings Menu. See your FP35 Operator’s Manual for more details.

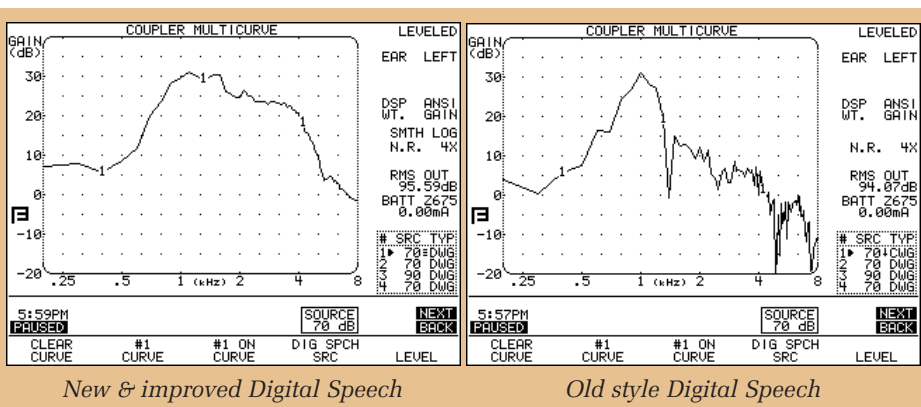


Figure 1 is a comparison of a hearing aid tested with the old style Digital Speech signal and the new, improved Digital Speech signal.

**Step 2:** Disable the reference microphone. In your local menu, you can turn on and off the reference microphone. This is the microphone that is placed outside the ear. In some cases, the amplified signal of the hearing aid can escape the ear and be measured by the reference microphone. This can typically cause a 2-3 dB peak difference in the high frequencies. See Figure 2.

When disabling the reference microphone, it is very important that the patient does not move after the leveling process. The reference microphone is normally used to account for any changes in the sound field caused by the patient moving around. Please note that



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