Using the Verifit 1 to verify the telecoil gain in hearing aids

Juliëtte Sterkens, AuD
jsterkens@hearingloss.org

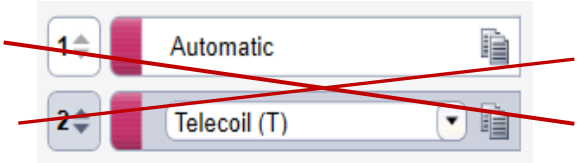
Purpose: This handout will help you verify the telecoil setting in a hearing aid. It is essential that the hearing aid provides the ***same*** gain to a speech input in the telecoil setting as it does in the microphone setting. Too little gain in the T-coil setting and the client will not hear well in a hearing loop; too much gain and the client will complain the hearing loop is too loud, or it may put the hearing aid in saturation and distort. In many devices, the telecoil default gain, when you switch from M to T, is (nearly) identical to that of the microphone. Still, if clients complain about hearing loops being too quiet or loud, this test is the only way to verify a telecoil setting.

Average time: less than 1-2 minutes per instrument.

Equipment needed: The Verifit 1 (or Verifit 2) Hearing Instrument Testbox (HIT).

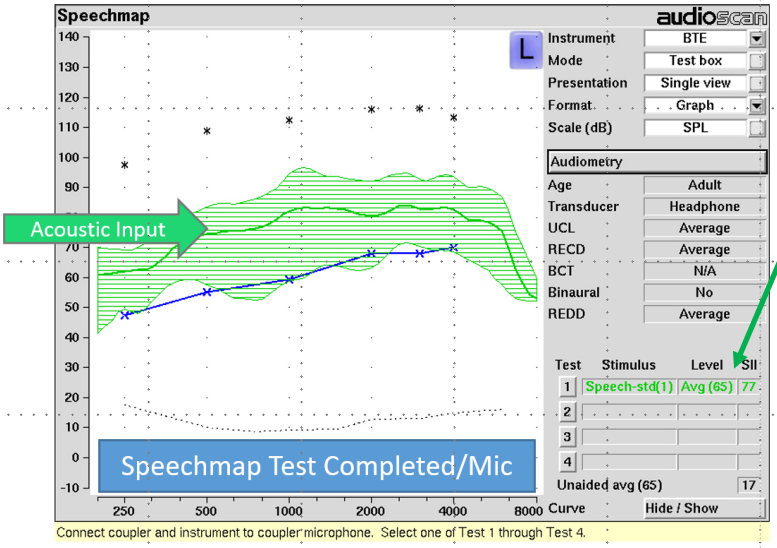
The screenshots below are for Verifit I. Using a Verifit 2 is even easier – as it automatically holds the hearing aid(s) to be tested in the "as worn on the ear" position.

Program the hearing instrument with a separate telecoil/T-coil program. Know that an "autocoil" setting will not work for your client in a hearing loop or while using a neckloop. Be sure to program a "Public Loop" or "Public T, " not a Phone T.

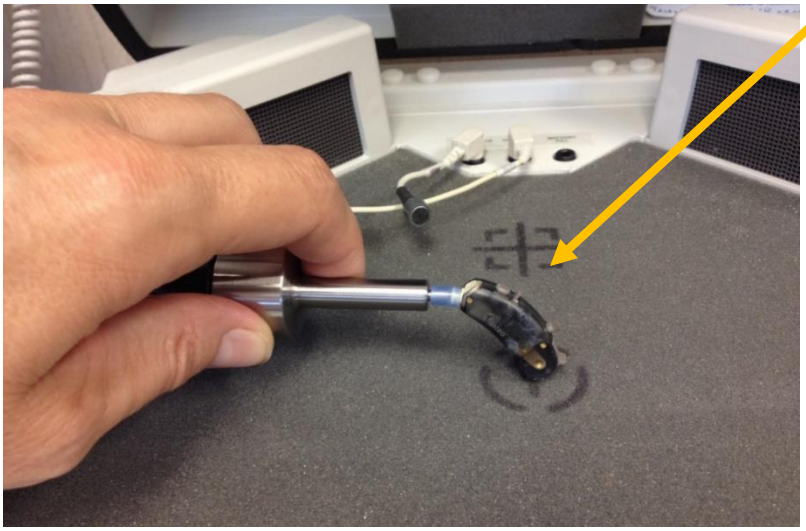


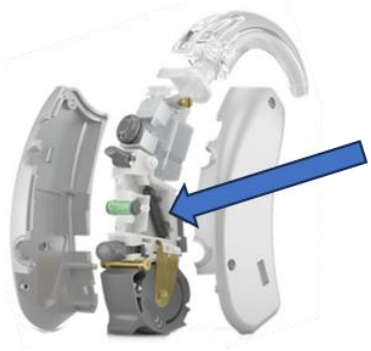
1. Test the telecoil **after** you have finished programming and verify that the acoustic settings are appropriate for your client. Remove the instrument from the client's ear. Position the hearing aid in the test box for a Frequency Response Test. Know that this is NOT an ANSI test measure. You are simply going to measure if the Mic response to a 65dB ***acoustic speech input*** matches the response to a 65dB ***magnetic speech input***. The goal is to compare the two responses and, if needed, reprogram the telecoil response to match the mic response as closely as possible. Close the lid.

2. Ensure the instrument is set to Microphone – run the test using, in this case, 65dB speech input. **Run the test with the lid closed. Orientation** of the aid in the test box is of no importance.



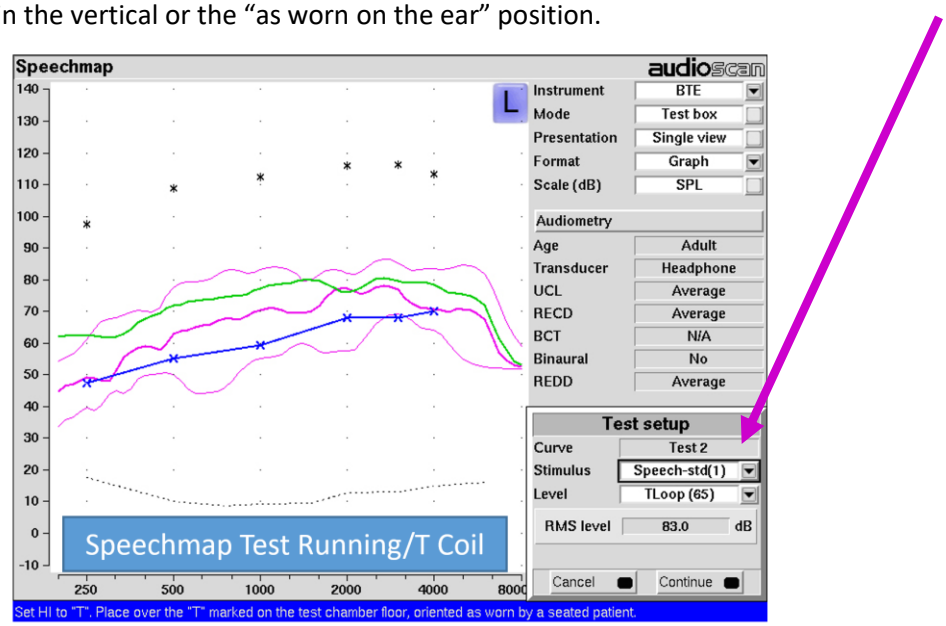
3. Open the test box, set the hearing aid to "T" or telecoil, and position the instrument above the T marked area in the Verifit 1 - **Closing the lid for the telecoil test is unnecessary.**
Note: **You must orient the instrument to the position of your client's ear to ensure a vertically oriented telecoil. When using the Verifit 2 – hearing instruments are correctly positioned above the "T" (hearing loop) area in the HIT box.**





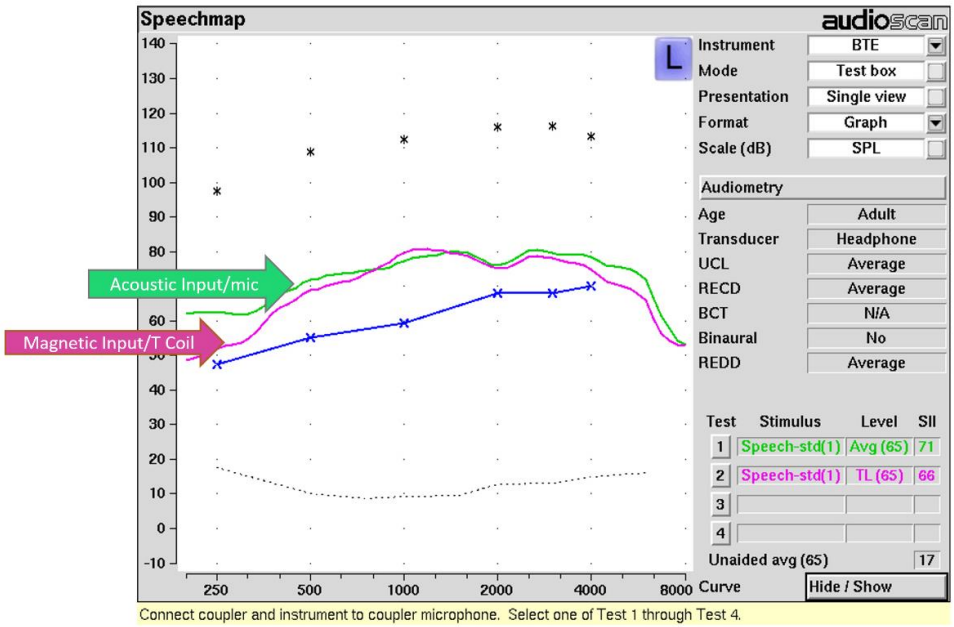
In the images showing the inside hearing aid components – the black component at the end of the arrows is the telecoil. The MFR shows this device in their spec sheets positioned as on the left (blue arrow), and the telecoil is tilted backward and is no longer vertical. This is not how this device is worn on the client's ear. In real life, it is worn as shown in the image above (red arrow), and when that is the case – the telecoil is nearly plumb/vertical.

4. Set input to the TL (Test-Loop) level at the same value as before – in this case, it is shown as 65dB. **Run the TL test with the lid open** - this will allow you to hold the instrument in the vertical or the "as worn on the ear" position.



5. Compare the green gain curve (acoustic input of 65dB) to the lavender curve (magnetic input of equal value/65dB) – if they match, ***which in this case they don't,*** YOU ARE DONE.

6. Adjust the telecoil gain via the programming software and rerun the test. Remember to hold the hearing aid in a vertical position. It is not necessary to close the lid for the telecoil test. Retest. The image below shows that the green (acoustic input) and lavender (magnetic input) curves overlap. The microphone and telecoil gain are said to be transparent. Save for your client's records. You are done!



Congratulations. Now, when your client switches to the T mode while in a hearing loop that meets the IEC 60118-4 standard, he or she will have a great listening experience.

Updated 11/2024