

Hearing Aid Checks Using the Fonix FP35

The object of the test sequence with the FP35 is to produce a set of 3 curves on the screen, which are then compared with the curves on the child's record sheet. Any significant discrepancy indicates a possible fault, which can then be investigated.

The Fonix FP35 allows hearing aid performance to be measured as **gain**, rather than **output**, in accordance with current guidelines

The recommended input figures for the 3 curves are 50dB, 65dB and 80dB, ALL MEASURED WITH THE AID AT USER VOLUME. This procedure can be used with all hearing aids, digital or analogue.

1. The FP35 has an external, laptop-style power supply which will need to be connected if it is not already. Unlike a laptop, however, the plug to the rear of the FP35 is a silver DIN plug which contains 5 pins in a semicircle. It is important that this plug is connected to its socket the correct way round **before the power supply box is connected to the mains**. If this is not done, damage may result. Switch on at the mains supply and, if necessary, press the "OPERATE" button to power up the machine and display the opening screen. Below the screen is a row of 5 buttons which have different functions depending on which "page" on the screen you are in. Press the button marked "COUPLER MULTICURVE".

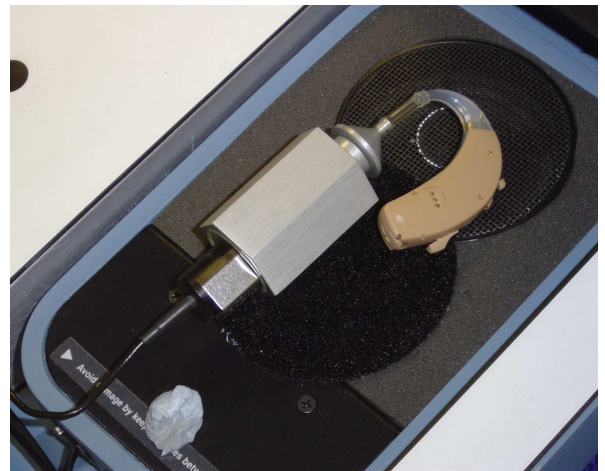
2. Open the test chamber and place the measurement microphone and coupler side by side above the loudspeaker. Close the chamber lid, press "LEVEL" and "START" to begin the levelling process (this is similar to the "calibration" process on the Audioscan but is quicker).

As we are measuring GAIN, not output, look at the top of the vertical graph axis on the display. If it says "SPL" (which means **S**ound **P**ressure **L**evel, or output) press MENU and use the vertical arrow keys to move the cursor in the menu box to "DISPLAY", then the horizontal arrow keys to toggle from SPL to GAIN. Press "MENU" or "EXIT" to exit the menu.



Setup for levelling

3. Open the chamber, insert the mic into the 2cc coupler as far as it will go and attach the hearing aid to the plastic tubing at the end. Place the assembly so that the hearing aid mic is above the centre of the loudspeaker, and use the Velcro on the coupler to hold it in place. Switch the aid on, set to user volume and close the chamber.



Setup for testing

4. The FP35 offers several types of test signal. For all gain measurements the simulated speech signal abbreviated to "DIG SPCH" is used. Check that the display above button F4 says "DIG SPCH" and if not press F4 repeatedly until it does.
5. Above this display is a box indicating the source in dBs. If necessary, use the vertical cursor (arrow) keys to set this to 50dB. Press "START/STOP". A curve will appear which is "live" and sensitive to changes in hearing aid setting or outside noise. When it has settled press "START/STOP" to "freeze" it. This is now stored as curve 1, the 50dB curve.
6. Press F2 to change the display from "CURVE #1" to "CURVE #2". Check that the display above F4 still says "DIG SPCH" and if not press F4 until it does. Check that the source is 65dB and, if not, use the vertical arrow keys to change it to 65dB. Press "START/STOP" to produce a second "live" curve on top of the "frozen" one. When it is steady press "START/STOP" to freeze it.
7. Repeat step 6 for an input of 80dB, always checking that the input source is "DIG SPCH" before proceeding. The 3 frozen curves can now be compared to the printed record.

Footnotes

1. The source settings (DIG SPCH at 50, 65 & 80dB for curves 1, 2 & 3 and NORMAL at 65dB for curve 4) need only be set for the first hearing aid tested. For subsequent aids these settings will be "remembered" and listed in the panel at the bottom right of the display. Toggling from one curve to the next with F2 will automatically select the required settings, though they should always be checked before running each curve.
2. The levelling procedure described in step 2 need only be done at the start of each session. Subsequent hearing aids can be tested beginning at step 3.
3. Some versions of the software offer two alternative Digital Speech Signals, "DSP ANSI" and "DSP ICRA". In this event, "DSP ANSI" should be used.