

# Calibration

## B.1 Calibrating the microphones

To calibrate the 7000 Test System's microphones, you will need a sound level calibrator such as the Quest CA-12, the 14mm-to-1 inch microphone adapter provided with your 7000 Test System, and a small flathead screwdriver. If you are calibrating the probe microphone, you will also need the probe microphone adapter and a Phillips-head screwdriver.

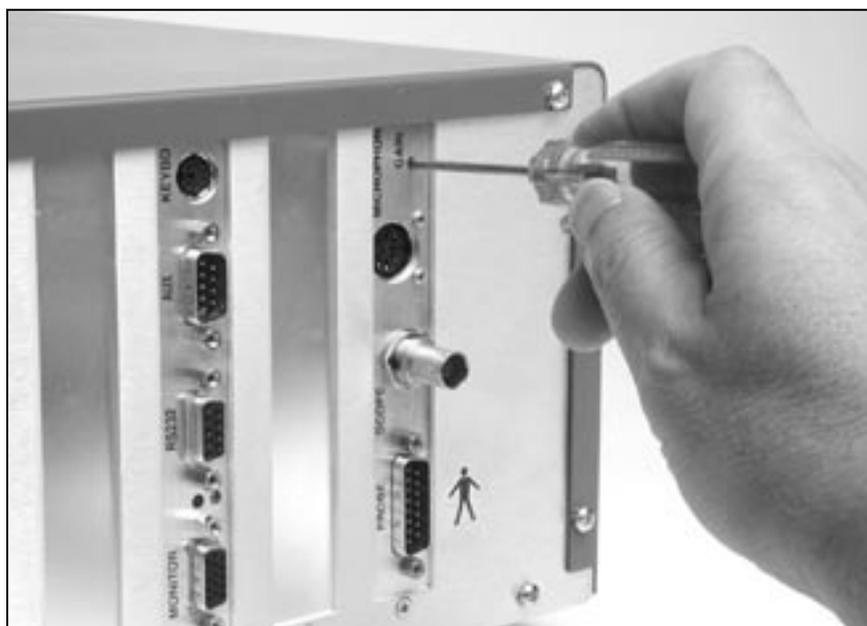


Figure B.1A—Equipment for calibrating the 7000 microphones.

### To calibrate the M1950E coupler microphone:

1. Press [MENU] from the Opening screen to open the Setup Menu.
2. Press [F6] to open the Microphone Calibration window.
3. Insert the 14mm-to-1 inch adapter into the sound level calibrator.
4. Insert the M1950E coupler microphone into the adapter.
5. Turn on the sound level calibrator and look at the “Coupler Mic” level in the Microphone Calibration window. It should match the calibrated tone emitted by the sound field calibrator. This is usually 110 dB SPL or 114 dB SPL. Check your calibrator for details.

6. If necessary, adjust the gain of the 1950E microphone by using the flathead screwdriver to adjust the “gain” pot on the back of the 7000 Test System next to the microphone connector. Match the levels as close as possible. If you are unable to adjust the gain of the microphone to the level emitted by the calibrator, you probably have a faulty microphone and should contact your local FONIX distributor or the Frye factory.



*Figure B.1B—Adjusting the gain pot with a flat head screwdriver*

**To calibrate the real-ear probe and reference microphones:**

1. Follow steps 1-3 above to set up the 7000 Hearing Aid Test System for calibration.
2. Use the down arrow on the 7000 keyboard to select “Probe Microphone” in the Microphone Calibration window.
3. Attach a new probe tube to the probe microphone.
4. Thread the probe tube through the edged side of the probe microphone adapter so that the probe tube sticks out a couple of millimeters from the other end of the adapter. See Figure B.1D.
5. Secure the probe tube in place by putting a dab of Fun-Tak on the edged end of the adapter.
6. Insert the probe microphone adapter with the attached probe microphone into the calibrator.



Figure B.1.C—Adjusting the reference pot with a Phillips-head screwdriver.

7. Turn on the sound level calibrator and look at the “Probe Mic” level in the Microphone Calibration window. It should match the calibrated tone emitted by the sound field calibrator.
8. If necessary, adjust the gain of the probe microphone by using the Phillips-head screwdriver to adjust the “probe” pot on the back of the remote module. Match the levels as close as possible. If you are unable to adjust the gain of the microphone to the level emitted by the calibrator, you probably have a faulty microphone and should contact your local FONIX distributor or the Frye factory.

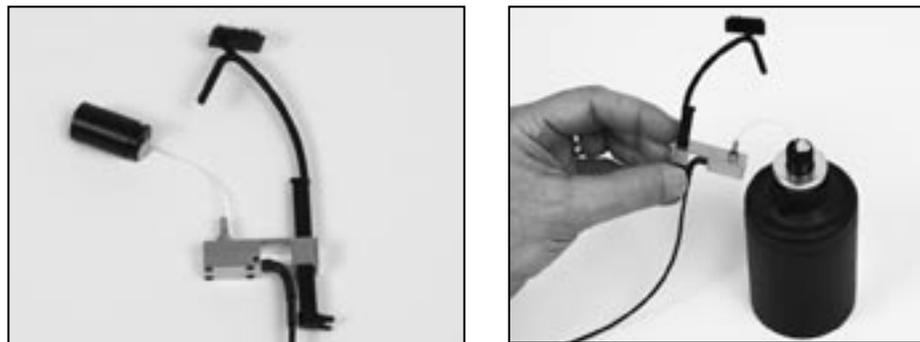


Figure B.1D—Calibrating the real-ear probe microphone

9. Press [EXIT] twice to return to the Opening screen.
10. Press [F2] to enter the Real-ear Navigation screen.
11. Press [F3] to enter the Real-ear Insertion Gain screen.
12. Press [MENU] to open the local menu.
13. Use the arrow keys to select Display and change its setting to Gain. Also use the arrow keys to select Composite Filter and change it to FLAT.
14. Press [EXIT] to close the local menu.
15. Use [F5] to select Composite.
16. Place the end of the probe tube at the opening of the reference microphone using a small dab of Fun Tak. You will need to remove the reference microphone from the Velcro wedge. See Figure B.1E.
17. Hold the integrated microphone six inches from the sound field speaker.
18. Press [START] to start a measurement and press [STOP] after a few seconds.
19. The displayed curve should be centered around the 0 dB line in the bottom graph on the screen. If necessary, adjust the gain of the reference microphone by using the Phillips-head screwdriver to adjust the “reference” pot on the back of the remote module, and repeat the measurement.
20. When finished, press [RESET] to delete all measurement curves on the analyzer and return the settings to their default conditions.



*Figure B.1E—Attach probe microphone to reference microphone*

## **B.2 Calibrating the insert earphone for the RECD**

The real-ear to coupler difference (RECD) is a measurement that can be performed when you have the Real-Ear Option (Quik Probe). There are two parts to the RECD: a coupler measurement and a real-ear measurement. The coupler measurement is considered a calibration procedure and needs to be done only when the probe and reference microphones are calibrated.

The RECD measurement is usually done with a 50-ohm insert earphone. Eventually, the 7000 Test System will also support an RECD method performed with a linear hearing aid, but that has not yet been implemented.

1. Insert the earphone connector into the ¼ inch “Earphone” jack on the back of the 7000 Test System.
2. Plug the other end of the earphone into the tubing of the ear level adapter attached to an HA-2 coupler.
3. Attach a new probe tube to the probe microphone.
4. Thread the probe tube through the edged side of the probe microphone adapter so that the probe tube sticks out a couple of millimeters from the other end of the adapter. See the setup for calibrating the probe microphone in the previous section. The probe microphone adapter is used in the same manner.
5. Secure the probe tube in place by putting a dab of Fun-Tak on the edged end of the adapter.
6. Insert the adapter into the HA-2 coupler.
7. Press [MENU] from the Opening screen to open the Setup Menu.
8. Press [F4] to perform the measurement. The screen will briefly display that the measurement is being taken and saved. No further action is necessary.
9. Press [EXIT] to return to the Opening screen.

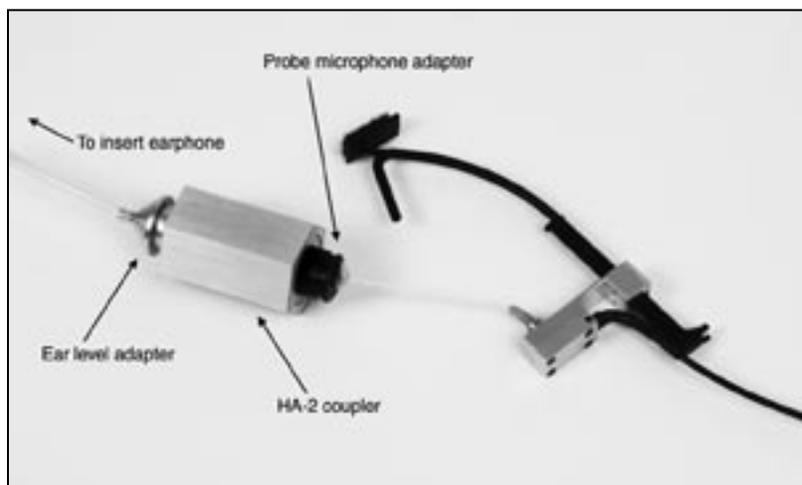


Figure B.2—Calibrating the insert earphone