

4.0 6400 General Instructions

4.1 Calibration

It is not necessary to calibrate every time you use the 6400. Rather, it should be done occasionally to check the accuracy of the adjustments for the microphones and the speaker.

You will need a sound-level calibrator such as a Frye Electronics modified Quest CA-12.

The following instructions assume that the instrument is properly assembled and turned on.

Locate the 14 mm to 1 inch adapter, the Probe Microphone calibrator adapter, and the calibration clip. See Figure 4.1.



Figure 4.1 Adapter, Probe Microphone Adapter, and Calibration Clip

4.1.1 Calibration of the Reference and Probe Microphones

1. Push [MENU] button.
2. Use [v] to move the highlighting bar to "CALIBRATE PROBE."
3. Put the 14 mm-to-1-inch adapter into the Quest CA-12 calibrator.
4. Insert the reference microphone into the calibrator adapter.
5. Turn on the calibrator with the switch on the bottom.
6. Calibrate the reference microphone.

- a. Push [<] or [>] button to activate measurement. The box on the lower part of the screen will read "MEASURED MIC. AMPLITUDE."
- b. If the number you see (under "REFERENCE") is not within 1 dB of 110 dB (for the CA-12), adjust the gain of the reference microphone by using a small screwdriver on the control marked "REFERENCE GAIN" found on the rear panel of the 6400 electronics module.

7. Calibrate the Probe Microphone

- a. Remove the reference microphone from the calibrator and insert the probe microphone adapter.
- b. Insert a probe tube into the calibrator adapter. Check to make certain nothing is clogging the probe tube, and that it is properly connected to the body of the probe microphone.
- c. Push the [<] or [>] button to start the measurement. The box on the lower part of the screen will read "MEASURED MIC AMPLITUDE." If the number you see under "PROBE" is significantly below 110 dB (for the CA-12), check to make certain that the probe tube has gone all the way into the adapter. Take the probe calibrator adapter out to check. If you are certain that the tube is properly inserted and that nothing is clogging the tube, the measurement should be within 1 dB of 110 dB for correct calibration.
- d. If necessary, adjust the gain of the probe by using a screwdriver on the control marked "PROBE" found on the rear panel of the 6400 electronics module.

4.1.2 Calibration of the Sound Field Speaker

This calibration procedure is done only occasionally to check the accuracy of the speaker level.

1. Prepare the room for the usual Real Ear test as described in Sections 4.2 and 4.3 of the 6400 manual. Situate a person, wearing the Velcro headband, in the proper position by the speaker.
2. Combine the reference microphone and the probe microphone with the calibration clip as shown in Figure 4.1.3.
3. Position both microphones on the headband just above the ear.
4. Push [START/STOP]. Observing the screen display, compare the SPL levels of the "RMS SOURCE" and "RMS OUT." If the levels are within 3 dB of each other, the calibration is correct. Push [START/STOP] to stop the test.
5. If the difference is greater than 3 dB, locate the adjustment for the speaker on the back panel of the 6500 electronics module. It is labeled "LEVEL," below the words "AUDIO SOURCE."
6. Loosen the nut and then turn the screw adjustment until the two levels are within 3 dB of each other. Retighten the nut.

4.1.3 Checking Probe and Reference Microphones Together

1. Fasten the calibration clip to the top edge of the reference microphone. See Figure 4.1.3.
2. Insert the probe tube through the tube on the clip until the tip of the probe is at the middle of the reference microphone grid.

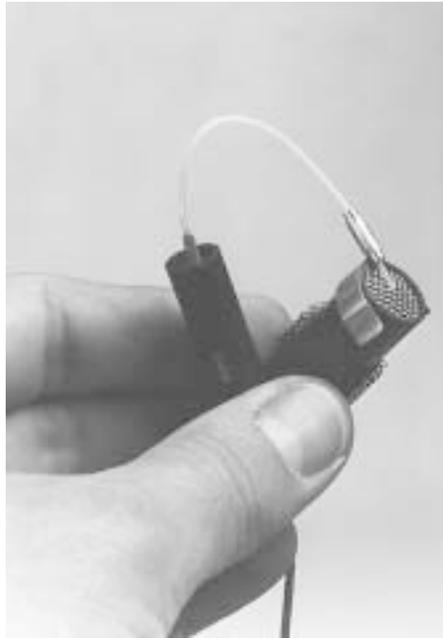


Figure 4.1.3

3. Hold the two connected microphones about 12 inches (30 cm) from the sound field speaker. Push the [START/STOP] button.
4. Since the reference microphone and the probe microphone should be within 2 dB of each other, the GAIN curve on the screen display should be very close to a straight line at 0 dB. If this is not the case, one or both microphones need recalibration.
5. Push [START/STOP] to stop the test.