

RECD on the FP35

The RECD is the “real-ear to coupler difference.” It is the difference between the acoustical resonance of a 2-cc coupler and the resonance in the ear canal. There are actually two difference measurements performed to obtain the RECD: the coupler measurement and the real-ear measurement.

To do this procedure on the FP35, you will need a 50-ohm insert earphone. You can obtain this from Frye Electronics. You can use an insert earphone from an audiometer, but make sure that it is a 50-ohm earphone, and you will probably need a 1/4 inch to 3.5 mm adapter. The resistance of the insert earphone is printed on the box for each ear.

Coupler measurement

The coupler measurement is considered a calibration procedure. The resonance inside a 2-cc coupler is constant, so it does not have to be measured for every patient. For this reason, the coupler part of the RECD is performed in an FP35 calibration screen.

1. Plug the insert earphone into the “earphone” jack on the back of the analyzer.
2. Remove the foam eartip from the insert earphone and attach the insert earphone tubing to the tubing of the HA-2 coupler.
3. Insert the coupler microphone into the HA-2 coupler. See Figure A.
4. Press [MENU] from the Opening screen.
5. Press [F4] to enter the Earphone Calibration screen.
6. The selection “Calibrate Ins. Earphone” should be selected.
7. Press [START] twice to perform the measurement.
8. Select “Calibrate Ins. Earphone (RECD)” with the down arrow key.
9. Press [START] twice to perform the measurement.
10. Press [F5] to save the calibration into permanent memory.
11. Press [EXIT] three times to return to the Opening screen.

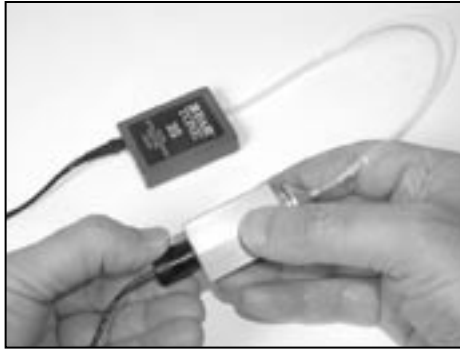


Figure A: Coupler setup for the RECD

The coupler measurement will need to be re-measured after the analyzer microphones are calibrated.

Real-ear measurement

The real-ear measurement is performed in the Audiogram Entry screen.

1. From the Opening screen, press [F2] to enter Real-ear mode
2. If the screen title does not say “Real-ear Audiogram Entry”, press [NEXT] until it appears.
3. Press [MENU] to open the local menu.
4. Select the desired ear using the left-right arrow keys.
5. Select ASSESSMENT with the up-down arrow keys.
6. Use the left-right arrow keys to select INS. EAR.
7. Press [EXIT] to close the local menu.
8. Press [F2] repeatedly until “RECD Select” is displayed above F2.
9. Look at the bottom right corner of the display. If you see the message “Earphone not calibrated,” you will need to perform the coupler measurement described in the section above.
10. Press [F3] to select MEASURE RECD.
11. Plug the insert earphone into the “earphone” jack on the back of the FP35. Make sure you use the same earphone that was used for the coupler measurement.

12. Insert the probe microphone into the patient's ear as usual.
13. Carefully insert the foam eartip or custom earmold attached to the insert earphone into the patient's ear without moving the probe tube. See Figure B.
14. Press [START/STOP] on the analyzer to take the RECD. The results will be displayed in graphical and numerical format on the display.

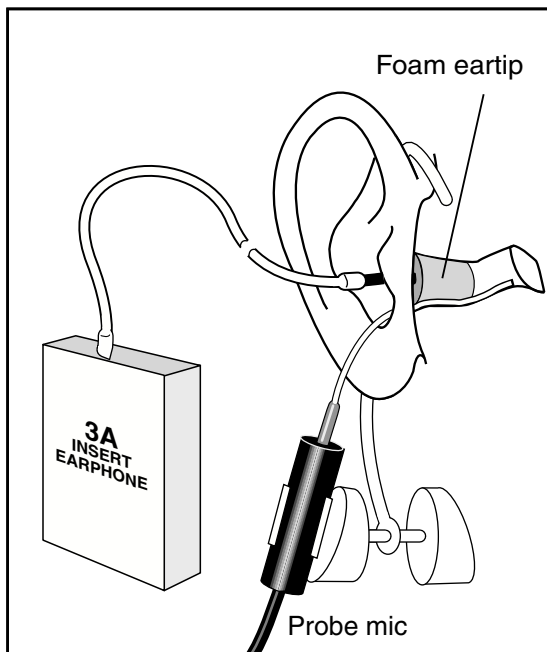


Figure B: Real-ear setup for the RECD

Troubleshooting

If the RECD values do not seem right:

1. Make sure the probe tube is inserted correctly and that the probe tube is clear of debris.
2. Make sure the insert earphone is inserted correctly and connected to the analyzer.
3. Check the validity of the coupler measurement.

To check the validity of the coupler measurement, you can use the black probe adapter:

1. Thread the probe tube through the black probe adapter and secure in place with a dab of Fun Tak.
2. Insert the adapter into the HA-2 coupler. Connect the insert earphone to the HA-2 coupler.
3. Follow the steps for the real-ear measurement described in the section above except keep the probe adapter setup described here. This performs the “real-ear” measurement with the probe microphone connected a 2-cc coupler. If the coupler measurement part of the RECD is valid, the resulting RECD should be within 2 dB of zero between 200-4000 Hz. The RECD response at 6000 and 8000 Hz is susceptible to noise and not always consistent.
4. If the coupler measurement is greater than 2 dB at any value between 200 and 4000 Hz, it is recommended to repeat the coupler measurement.