

# AppNote

## Checking Audiometer Calibration using the RM500 with Software version 2.6

*The procedure described in this note will allow you to check the calibration of your audiometers using insert earphones.*

*For continued accuracy, the coupler microphone on the RM500 should be checked regularly using a microphone calibrator. Adapters are available for Quest types QC10, QC20 or CA22.*

1. Calibrate the hearing aid test system and attach the 2cc coupler used to test BTE aids (HA-2).
2. Press <ADVANCED FEATURES>.
3. Use the arrow keys to highlight TOOLKIT and MANUAL CONTROL.
4. Press <CONTINUE>.
5. Use the arrow keys to set the stimulus level to 0 and the filter to 1/7 OCTAVE.
6. Connect the insert earphones to the audiometer and set it to 70 dB HL and CONTINUOUS.
7. Remove the earphone tip from the insert earphone and connect the insert earphone tubing to the HA-2 coupler tubing using the nipple adapter normally connected to the earphone tip.
8. Set the audiometer and RM500 to the frequency of interest, present the tone and read the COUPLER LEVEL on the RM500 screen. It should be within an acceptable error (usually 3 dB) of the value shown for the HA2 coupler in the table below.  
NOTE: At 125 Hz, you will have to set the RM500 filter to C-WEIGHTED. This increases the measurement error by about 1.5 dB.

NOTE: As a precaution against noise and linearity errors, it is a good idea to check levels for 65 and 75 HL at the lowest and highest frequencies you are using. The coupler mic. reading should change 5 dB when you change the HL dial setting by 5 dB.

NOTE: You can use the HA-1 coupler instead of the HA-2 coupler by sealing an earphone tip to the HA-1 coupler opening with putty (*a poor seal will cause errors in the low frequencies*). In this case, use the HA-1 values given in the table.

	70 dB DIAL	70 dB DIAL	ERROR
Hz	HA1 CPLR	HA2 CPLR	(dB)
125	96.5	98.5	±4
250	84.5	86.2	±2
500	76	77.1	±2
750	72	73.3	±2
1000	70	71.8	±1
1500	70	73.4	±2
2000	72.5	77.8	±2
3000	72.5	75.8	±2
4000	70	69.9	±2
6000	67.5	72.3	±2
8000	66.5	66.5	±3

NOTE: "ERROR" is the expected inaccuracy in an RM500 measurement.

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