

Hearing Aid Electroacoustics

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Introduction

This paper will outline the procedures used to accomplish the "Hearing Aid Electroacoustics" course final project. Before jumping to the methods used to achieve this goal, it might be wise to take a moment to state just what we were attempting to accomplish in the final project.

The Goals

1. Obtain a deep earmold silicone impression. (Already Completed)
2. Master the operation of the FONIX 6500 Real Time Analyzer. This includes use of an ETYMOTIC Research ER-3 TUBEPHONE insert earphone, ER-3-14 foam eartip, and ER7-14C probe tubes.
3. Learn the principles underlying use of the DIRECT ACCESS HA-1 2cc coupler, Zwislocki coupler-KEMAR manikin combination. This includes obtaining coupler historical information from Romanow (1942), Burkhard and Sachs (1975).
4. Master the use of an integrated spreadsheet and graphics software program, in this case "Excel 3" by Microsoft Corporation, for use in the evaluation of experimental test results. Use this program to find the mean and standard deviation of the test results. Print all results in graph form using the graphics programs contained in "Excel 3".
5. Perform five separate earcanal frequency response tests, using one different subject for each test. Compare each subject response curve with the response curve of a HA-1 2cc coupler, measured at the same time. During each separate test run, perform a Zwislocki coupler frequency response measurement using the KEMAR manikin. Compare the KEMAR frequency response measurement with the 2cc coupler measurement.