Build Hearing Aid Circuit

Counts as 6 points extra credit. Everyone works individually on this assignment. Due 12/9/2014, hand in a printed copy.

This assignment consists of a report on the performance of the circuit constructed according to the custom hearing aid filter in your group project. The discovery boards can be used or you can construct the circuit on any platform, but you will need ways to excite the circuit and take measurements. The report should read as a stand-alone document. You must be clear on what you intended to show and how you did it. Procedures should be written in enough detail so that another 2nd year engineering student should be able to repeat what you did from the description provided. All figures and table must have captions/titles, numbered and referred to the in the narrative. Figures and tables must be introduced, described, and tied into the point being made. You can format the report according to the following format:

1. Introduction (provide background and describe what report will show, should be about 1 paragraph.)
2. Description of circuit (should include picture of constructed circuit and schematic with labeling of components used, any difference between SPICE circuit and constructed circuit should be mentioned).
3. Description of transfer function measurement (should include a sketch of the measurement set up, be clear on test signals and procedure used to obtain transfer function magnitude estimates) – use supporting figures and tables as needed.
4. Results and comparison (should include graph of desired transfer function, SPICE transfer function, and measurements on same plot with each clearly labeled (use legend), should also include a table of Mean and RMS errors for the SPICE and measured TF magnitudes.
5. Discussion and conclusion (i.e. assessment of overall performance (good or bad) and why results between spice and actual measurement may have differed, should be about 2 paragraphs).