

EE 218 – LINEAR SYSTEMS II LABORATORY
Missouri University of Science & Technology

SEMESTER PROJECT

Project Description: Your TA has built 4 “black boxes”. The black boxes may, or may not, all be the same. By conducting tests, you should try to discover everything you can about the black boxes, such as:

- Input Impedance
- Output Impedance
- For small input signals does the box look like a linear, time invariant device?
- As the input amplitude increases, at what point does the total harmonic distortion on the output become significant? How does your answer change as a function of frequency and as you change your decision about what “significant” means?
- What is the impulse and frequency response of the device? Measure the frequency response in more than one way, and discuss which of the methods seems the most reliable.
- Develop a simple circuit model for the black box.

Formal Report: Each student is required to write a final report detailing the work performed to complete the semester project. The formal report should include the following elements:

- Title Page
- Abstract
- Table of Contents
- Introduction
- Description of Work
- Conclusion
- References (if appropriate)
- Appendices with computer code or data tables (if appropriate)

The formal report must be produced on a popular, PC based, word processing package (such as MS Word). Hand drawn charts and figures are not acceptable. The formal report is due at 5:00 PM on Friday of the last week of classes. There is not work to perform during finals week. This is no final exam in this course.

Grading: The grading criterion for your semester project is as follows:

- Overall Presentation/Content – 20%
- Abstract – 10%
- Input Impedance – 10%
- Output Impedance – 10%
- Linear Device – 5%
- Time Invariant Device – 5%
- THD – 15%
- Frequency Response and Impulse Response – 15%
- Circuit Model – 10%