Appendix A

Guidelines for Lab Reports

Each group is required to submit a lab report due at the beginning of the lab session in the week following the completion of each lab. Each student is also required to maintain a lab notebook that is used during the experiment to record data, note observations, etc. This notebook is a written record of all the occurrences during your experiment. Do not rely on your memory for important data and observations that will be needed for the lab report.

The primary purpose of this lab class is to aid in understanding of communication systems. A secondary goal is to improve your techincal communication abilities. As such, the use of industry-standard (like Microsoft Word) and academia-standard (like LaTeX) word processors are encouraged. Nevertheless, lab reports must be written on a word processor of your choice. In the interests of the environment, groups are urged to submit their lab reports electronically. Of course, electronically submitted reports should be self-contained in a single un-editable file (like Adobe PDF).

Include the following in your lab report:

Title Page Include at least the title and number of the experiment, the date, and all the students' names in your group.

Abstract In one or two paragraphs, this section should summarize the objectives and intentions of the experiment. These should be followed by the main result of the lab and an abridged conclusion. Finally, include a line of keywords you think encapsulate the lab and that a search engine would find useful.

Equipment List the equipment used in each lab session. Usually model name, model number, and serial number suffice. Include test equipment, IC's, electronic devices, PC's, etc.

Data Transfer the data collected in your lab notebooks to the report. Use tables and organize the data so that it is easily readable and translated to your results. Use this data to draw your conclusions about the lab. If

lengthy, include a Data Summary section in the main body of the report and relegate the unabridged data to an appendix.

Calculations If the lab requires you to perform calculations, include a sample calculation in your report. This is the way you can reread your report at a later date and understand how you arrived at conclusions.

Figures Each experiment involves working with specific circuits for modulation and demodulation of signals. Include the circuit diagrams in your report. You may copy the diagrams from the experiment handouts, but carefully label any changes and customizations you make to the original circuit.

Several of the experiments require you to graph data and/or waveforms. Use a computer to generate any required graphs in your reports. Be sure to label all axes and important parts of the graphs.

If your word processor does not support integrated text and figures, include any relevant figures in an appendix; be sure to thoroughly label them to make cross-referencing easier.

Discussion of Results State what observations you made during your experiment and their significance. Reference which circuit diagrams, data tables, and graphs explain your results. Answer the discussion questions (if any).

Conclusion In this section, determine whether the experimental results match theoretical expectations. If not, try to reason why or what could have been done differently to observe the theoretical results.

Appendices *(if any)* Reading a 50 page lab report is agonizing. Reading a 10 page lab report with 40 pages of appendices is much nicer. Do yourself and your grader a favor: Condense the body of the report as much as possible.