

APPENDIX A

Guidelines for Formal Report Writing

A formal report is expected to include the following sections

Cover Page

Contains experiment number and title, student name, partners' names, date and abstract.

Abstract

A few statements that summarize the work done in the experiment, the general procedure and results and observations.

Introduction

A brief summary of the theoretical background needed to understand the experiment. This background may include laws and formulas, models, equivalent circuits, block diagrams, etc. A clear statement of objective should also be included in this section.

Procedure

A list of steps done in the experiment. Each step should be briefly explained and outlined. The circuit connections, block diagram and/or modifications to the handout procedure should be included in the appropriate step. All components in the circuit connections should be marked clearly. (Do not copy the lab manual; write your own statements)

Results

The experimental results obtained from each of the steps in the procedure. All data should be tabulated.

Discussion of Results

A comprehensive evaluation of the results. This evaluation includes the following:

- Calculation of theoretical values.
- Plots of experimental and theoretical values.
- Error analysis (calculation of % error associated with each data set).
- Discussion of errors and ways to reduce them.
- Any specific observations and comments.

Conclusions

A few statements discussing the following:

- A general statement about the experiment and how close it accomplishes the objectives. Problems and Conclusions of the experiment regarding procedure, equipment, accuracy, learning benefits, etc.
- Answer to questions (those in the lab manual and those given by instructor).

Important notes

- Submitting identical or even similar reports will be considered as act of cheating.
- All pages should be numbered.
- All figures (including circuits diagrams, plots, block diagrams, etc.) should be numbered and given meaningful captions and legends (see examples on next page).
- tables should be numbered and given meaningful captions (see examples on next page).
- Landscape figures or tables should be oriented correctly.
- Report grade will be based on the quality of the above sections and on correct format.
- Use of computers in word setting and plotting is highly encouraged.

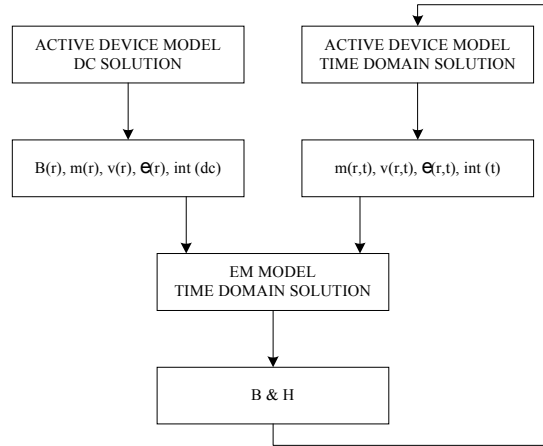


Figure 1: Flowchart describing the sequence of operations in the coupled model

Simulation Parameter	Value
Drain and source contacts	0.5 μm
Gate length	0.25 μm
Gate source separation	0.4 μm
Drain gate separation	0.5 μm
Active layer thickness	0.1 μm
Buffer layer thickness	0.2 μm
Active layer doping	$2.0 \times 10^{17} \text{ cm}^{-3}$
Buffer layer doping	$1.0 \times 10^{14} \text{ cm}^{-3}$
Gate source voltage	-0.5 V
Drain source voltage	3.0 V

Table 1: Simulation Parameters Used in Static FET Characterization

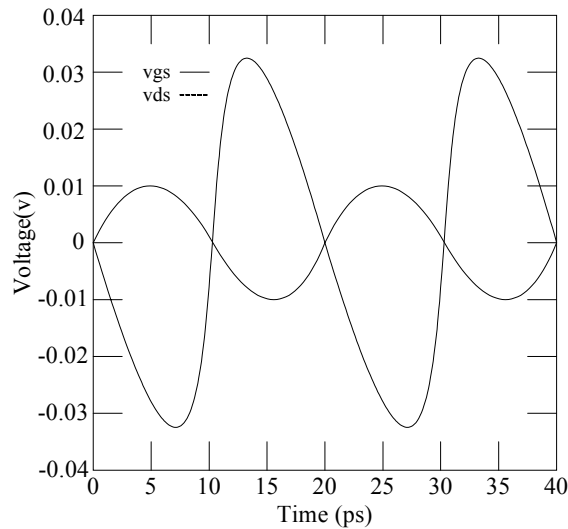


Figure 2: Typical input output signals for $L_{\text{gr}} = 0.25 \mu\text{m}$ and $f = 80 \text{ GHz}$