Final Lab Instruction

• Introduction

Based on all the labs presented throughout the course, the final laboratory assignment is still required to be completed using System Vue. The DPD extraction and DPD validation of a 3-way PA with memory effects are included . This laboratory will help you digest necessary knowledge comprehensively.

The score of final lab depends on four parts: 30%(model)+30%(performance)+20%(quality of final report)+20%(presentation)

Submitted Deadline: May 19, 2025 (23:00)

PPT Submitted Deadline: May 21, 2025 (23:00)

Warning: Plagiarism is strictly prohibited. For violations, the students may fail in this course. You should work within your group. If you have any questions, please feel free to contact TAs and the teacher.

• Essential parts

Part 1: DPD Extraction

A 3-way PA model based on decomposed vector rotation technique is given, and you do not have to know the details of the PA. All you need is to extract DPD coefficients by the method which you have learned in the previous classes. You need to use a memory polynomial (MP) model and at least one other model, such as a machine learning model to extract DPD coefficients. Also, you are ought to compare the performance of these models.

Part 2: DPD Validation

The DPD validation procedure involves validating the coefficients of extracted reversed power amplifier (PA) characteristics, which is necessary to verify DPD performance.

Part 3: Final Report

No template is provided. It is essential to include all the necessary steps to present your ideas and thoughts clearly.

Note: This final lab constitutes 50% of the overall course grade. The final lab score depends on the model used to realize DPD, the model performance, the quality of the report and the presentation in week 14 and 15. Using over two kinds of models to realize DPD correctly, you can earn extra marks. Examples of full DPD procedure by SVM (Support Vector Machine), NN (Netural Network) and DNN (Deep Netural Network) models are given as references, but you must make the necessary adjustments (model type, model parameters and so on) to suit your needs.