

Part I - Assignments for converter design work in a two-class closed circuit (the weight of this assignment is 70%)

1. Drawing of the selected converter.
2. High school performance, design considerations and component selection: calculating the value of the coil, the value of the output capacitor, input currents and output - according to the data of the converter and the selected assumptions for the size of the change in the coil current and the change in the output voltage and anything else you wish to include at your discretion.
3. You may decide as you wish on the criterion for determining the magnitude of the current change in the coil in the % range 5 - 20% of the value of the average current in the coil.
4. You may decide as you wish on the criterion for determining the size of the change in the output voltage in the range of %0.5 - 3% of the average output voltage.
5. Determination of turnover factor For the ideal case D
6. Design considerations can begin with a first order of laying. CCM and PIPO
7. Building an average model.
8. Building a model for a small signal.
9. Planning and sketching the control circuit and calculating the various constants.
10. Analytical control testing and through simulation b. MATLAB
11. Performing a simulation for the total circuit in the software Change in the work and load ranges, PSIM
12. Displaying graphs (plots) of the following currents:
 - (A). Coil current in all working ranges (single graph).
 - (B). Output voltage in all working ranges (single graph).
 - (third). Buda drawing for, , in all working ranges (individual graph for each transmission) in the software .MATLAB
13. Display other graphs at your discretion.
14. The way the outlines are presented is up to you (it is recommended to make such a choice that allows a relative presentation and comparative).

15. There is Analyze all the results and outlines and draw conclusions from the analysis: conclusions

Behavioral and engineering conclusions - analysis and inference are very important in weight

Grade

General Leproy Small, and therefore it should be given extensive consideration.

Part B - presentation of a converter in a closed circle (the weight of this assignment is 30%):

1. Building the circuit in the software. PSIM
2. Designing the control circuit based on controllers built into the software. or based on PSIM server amplifiers
3. Simulating the circuit in the given working ranges while analyzing the results in the time plane and the frequency plane (BODE)
4. Presentation of the data And analyzing the results in the sense of the stability of the circuit Phase Margin, Gain Margin
5. Presentation of graphs (plots) of the following currents: