

Meeting summary: 25/10/18

Present during meeting

- Lajos Török (Supervisor)
- Nicolás Murguizur
- Nicolai Haugaard
- Estefanía Ruiz
- Thassilo Lang
- Jesper Kloster
- Aitor Terán

Meeting Agenda

1. Follow-up
2. Transitions between operation modes
3. Component sizing
4. MPPT algorithm
5. Other

Meeting discussion

1. Follow-up
 - a. The group showed Lajos the actual status of the project.
2. Transitions between operation modes
 - a. Use just two operating points: Buck and Boost.
 - b. Choosing a switching frequency lower than 100kHz would be enough for compatibility with the RT-box.
 - a. Design of the inductor instead of buying a commercial one as the specifications vary for different applications.
 - b. Choose an input voltage ripple lower than 0.1% and then choose the value of the capacitor input approx. 10 times higher than the theoretical one. For the output capacitor is not necessary to be that high.
 - c. Power losses in the system will not be analyzed in detail. We will measure the power losses looking at the efficiency of the converter.
3. MPPT algorithm
 - a. MPPT controller with duty cycle as output connected to PWM block to drive the MOSFETs.
 - b. Not necessary to do a small-signal model.
 - c. PV model taken from a demo in PLECs and modify the parameters according to the datasheet of the panel we choose.

4. Other

- a. Access to the lab could be available from next week. Talk to the person responsible of the lab: Mads Lund.
- b. PCB design:
 - i. Use individual MOSFETs and individual isolated gate drivers. Autocoupler + driver with an external power supply (Traco).
 - ii. Voltage regulators: Traco
 - iii. Not necessary EMI filter.
 - iv. Grounds in the system won't be shared so for the current and voltage measurements we can use LEM modules. Lajos sent the group datasheet for current sensors based in LEM modules.
 - v. Regarding the model look at the demo model available in PLECs for a Grid-Connected Single-Phase Solar Inverter.
 - vi. Send the supervisors the model in PLECs when we have it finished to get feedback/help.