



FPGA Programming for an Exploratory In-Orbit Verification of an E-Band (71-76 GHz) Satellite Link

Project:

In the framework of the EIVE Project the Institute of Robust Power Semiconductor Systems (ILH) is developing a 6-Unit CubeSat, flying in the Low Earth Orbit (LEO).



Scientific Mission:

- (1) PRBS transmission with various modulation schemes (QPSK, n-QAM, ...) for in-depth data-link analysis;
- (2) Live video streaming of the camera once Line-of-Sight (LoS) data transmission is possible;
- (3) Video recording during e.g. one orbital period and data transmission once LoS Data Link is possible.

Your Tasks(*):

1. Program the FPGA so that it fulfills the mission requirements;
2. Understand the FPGA and DAC configurations and implement the connection between them (circuit design, software programming) through IP Cores;
3. Develop the DC power supply for all the components.

Your Qualifications:

- Hands-on experience in developing FPGA algorithms;
- Familiar with software development: VHDL and/or Verilog, Xilinx Vivado;
- Passionate for producing high-quality, space-ready and well-tested code;
- Knowledge of RF circuit design is advantageous;
- Knowledge of communication protocols is an asset.

Contact:

Laura Manoliu, M.Sc.
Pfaffenwaldring 32, 70569 Stuttgart
Interimsgebäude 1
+49 711 685-61685
laura.manoliu@ilh.uni-stuttgart.de

www.eive.space

