RF-Digital Project

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

In brief

- **Ametys Code:** N8AE11C
- **Open to exchange students:** No

Presentation

Objectives

To design, implement, and validate a mixed analog-digital data transmission system based on a functional specification.

- Apply acquired knowledge in analog and digital electronics and FPGA design.

- Develop autonomy in project management.

- Select the sampling frequency and components to meet the specifications.

- Conduct experimental tests and present the final product orally.

Description

- The analog functions will be implemented using operational amplifier circuits and switching MOSFET transistors, tested through simulation before being implemented on a PCB.

- The digital part will be developed in VHDL on an FPGA development board.

- The choice of sampling frequency and components must be justified.

Pre-requisites

- Operational amplifier circuits

- MOSFET transistors in switching mode

- Transmission gates (MOSFETs)

- Voltage level converters (MOSFETs)

- Digital functions: counters, state machines, etc.

- VHDL programming language