Microwave Project

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

In brief

- **Ametys Code:** N8EE04A
- **Open to exchange students:** Yes

Presentation

Objectives

Upon completion of this course, students will be able to:

Work in a cooperative environment with different design teams.

Define equipment specifications that enable system specifications to be met.

Define the topology of equipment that meets the following criteria:

gain (losses), linearity, consumption, power dissipation, efficiency and performance.

Define appropriate design methods.

Implement a function using planar technology.

Comply with electrical performance constraints, technology implementation constraints and design deadlines.

Characterise equipment through simulation and measurement

Analyse equipment performance

Propose methods for correcting devices in order to strictly meet the initial specifications.

Description

Design of an RF Rx/TX system using planar technology: 6GHz to 4GHz transponder.
Students are responsible for developing equipment that will be integrated into the overall system. All functions will be developed entirely from the definition of specifications to their physical realization and characterization.
The various pieces of equipment produced are:

- Antennas
- Preselection filters
- IF filters
- Image filters
- Amplifiers: LNA, LLA, MLA
- Mixers
- Oscillators
- Duplexer

Pre-requisites

Course N7EE09B “Passive RF Circuits” - 2nd year EEEA, Electronics track

Course N9EE06A “Active RF Circuits” - 2nd year EEEA, Electronics track

ADS lab, N7EE06D, 2nd year EEEA, Electronics track