Transmission Lines

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

Semester
Printemps

In brief

- **Ametys Code:** N8AE03A
- **Open to exchange students:** No

Presentation

Objectives

At the end of this course, students will be able to:

- Qualify propagation in transmission lines.

- Analyze reflections when the line is loaded.

- Develop appropriate adaptation techniques based on loads and frequency bands.

Students will be able to qualify these different concepts both analytically and on a Smith chart.

Description

In this course, students will learn about guided propagation (reflection, transmission, standing waves). They will use Smith charts to solve circuits. Matching techniques will be explained in detail (using discrete components, quarter-wave inverters, simple stub

circuits). S parameters will be introduced, as well as the network analyzer used to measure them. Exercises will illustrate the course. An ADS Design Office also allows students to understand and verify the adaptation techniques used.

Pre-requisites

Circuit basics. Mathematics basics (complex calculations, linear algebra, trigonometry)