EMC for SMPS

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

- **Ametys Code:** N9EE09C
- **Open to exchange students:** Yes

Presentation

Objectives

At the end of the training course on EMC in switching power supplies, M2-level students will be able to determine the nature of the various sources of interference within electronic devices and make the best choices in terms of packaging, 3D assembly, and loss/EMC trade-offs, demonstrating their mastery of the concepts related to conducted and radiated emissions when the harmonic spectrum of the generated signals complies with industry standards.

Description

Course outline:
- Technology limits
  - Silicon components (MOSFET, Diode)
  - Passive devices (Inductance, Capacitance)
- EMC
  - DC/DC converter Spectral analysis
  - EMI filter design
  - Board and IC Layout: rules of thumb

Pre-requisites

Knowledge of the operating principles of bipolar and silicon MOSFET transistors, as well as the basics of analog circuit design (Kirchhoff's current/voltage laws, passive dipoles, op-amp-based circuits, etc.) and the “MOSFET Driver Circuits" course.