

Télécommunications

[M]MIC-Antennas

IDENTIFICATION

CODE : GEA-4-S1-EC-TC21
ECTS : 1.0

HOURS

Lectures : 9.0 h
Seminars : 9.0 h
Laboratory : 4.0 h
Project : 0.0 h
Teacher-student
contact : 22.0 h
Personal work : 20.0 h
Total : 42.0 h

ASSESSMENT METHOD

2h + report + defence of project

TEACHING AIDS

Copy of lecture slides
CDROM of essential documents
including ADS and Momentum
software and tutorial

TEACHING LANGUAGE

French

CONTACT

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AIMS

The aims of the course is the design of RF communication systems (up and down conversion) including RF amplifiers (LNA, PA), mixer, oscillator (VCO) and antenna.

CONTENT

RF Amplifiers : stability, gain, linearity, noise figure,...
Oscillators : tuning range, phase noise, pulling, pushing,...
Mixer : isolation, directivity, linearity, noise figure,...
structure of radio frequencies systems
digital modulations FSK, PSK, QAM, OFDM,...
Wire antenna : principles and applications, specifications, alignment of antenna; patch antenna.

Practical courses:

LNA and Front end study and design [ADS d'Agilent Technologies] (2x4h)
Patch antenna design for WLAN systems [ADS d'Agilent Technologies] (1x4h)

BIBLIOGRAPHY

R. Gilmore, L. Besser : Practical RF circuit design for modern wireless systems, vol. 2 Ed. Artech House, 2003, 569 p
T.S. Rapport : Wireless communications : principle and practice, Ed. Prentice Hall, 1996, 641 p
P.F. Combes, : Micro-ondes, vol. 1 et 2, Ed. Dunod, 1996, 380 p

PRE-REQUISITE

3 graduating years in electronics
GE-3-EC1, GE-3-EC2