Integrated System Design

2 units (selection)

Shinsuke Konaka · Professor / Electrical and Electronic Systems, Electrical and Electronic Engineering, Systems Innovation Engineering

Target〉 High frequency design method and theory for GHz/Gbit high speed integrated circuits are lectured and discussed.

Outline〉 High frequency circuit design methodology using circuit simulator and 3D electromagnetic simulator is lectured by using high speed bipolar/MOS transistor parameters and high frequency circuit models of wire, poly-silicon resistor, MIM capacitor and spiral inductor.

Style〉 Lecture and excercise

Keyword〉 ***RF analog circuit design, AC device parameters, high frequency integrated circuits***

Relational Lecture〉 "**Integrated System Design**"(0.5)

Goal〉

1. To understand high frequency circuit models of transistor, wire, resistor, MIM capacitor and spiral inductor.
2. To understand high frequency circuit design and measurement.

Schedule〉

1. Bipolar/MOS transistor device models
2. AC equivalent circuit models of a wire, resistor, MIM capacitor and spiral inductor
3. S parameter measurements and AC device parameter extractions
4. High frequency stability design
5. Case studies of high frequency integrated circuits

Evaluation Criteria〉 Report 100%. The passing mark is not less than 60%.

Contents〉 http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216698

Contact〉

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