

Modern Radio Systems Engineering

Summer term 2016

INSTITUT FÜR HOCHFREQUENZTECHNIK UND ELEKTRONIK



Lecture announcement SS2015

Lecturer: Prof. Dr. T. Zwick

Assistant: Akanksha Bhutani
Jörg Eisenbeis

Place: NTI Hörsaal
Building 30.10

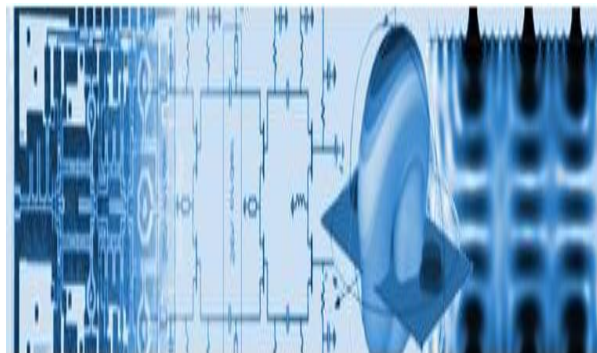
Lecture: Tue. 11:30 – 13:00
Exercise: Mon. 14:00 – 17:15
(see schedule)

Exam: oral

Lecture start: April 19, 2016
Exercise start: May 09, 2016

Content

- Introduction to radio systems
- Radio channel fundamentals and antennas
- Noise
- Non-linearity and time variance
- Sensitivity and dynamic range
- Transceiver Architectures
- Case Studies



Teaching Assistant

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Additional Information on

http://www.ihe.kit.edu/VorlesungenSS_3188.php

Online lecture support with ILIAS



[23430] Modern Radio Systems Engineering

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Calendar

< April 2012 >

W	Mo	Tu	We	Th	Fr	Sa	Su
13	26	27	28	29	30	31	1

ILIAS will be used to send important **E-Mails** concerning **schedule** and organization of the **exam**. The **script** will be provided here.

Link: https://ilias.studium.kit.edu/goto_produkativ_fold_518433.html
Or: Follow the link on the MRSE homepage. Login with your SCC-Account.

Schedule

Lecture

1	Tue.11:30	19.04.2016
2	Tue.11:30	26.05.2016
3	Tue.11:30	03.05.2016
4	Tue.11:30	10.05.2016
5	Tue.11:30	24.05.2016
6	Tue.11:30	31.05.2016
7	Tue.11:30	07.06.2016
8	Tue.11:30	14.06.2016
9	Tue.11:30	21.06.2016
10	Tue.11:30	28.06.2016
11	Tue.11:30	05.07.2016
12	Tue.11:30	12.07.2016

Exercise

1	Mon. 14:00 – 17:15	09.05.2016	Introduction to SystemVue <i>Building 20.20</i> <i>B-Pool Room -111.1</i>
2			
3	Mon. 14:00 – 15:30	30.05.2016	Direct down conversion receiver with IQ branch <i>Building 20.20</i> <i>B-Pool Room -111.1</i>
4	Mon. 14:00 – 17:15	13.06.2016	QPSK transmitter and bit error rate estimation <i>Building 20.20</i> <i>B-Pool Room -111.1</i>
5			
6	Mon. 14:00 – 17:15	27.06.2016	FMCW radar <i>Building 20.20</i> <i>B-Pool Room -111.1</i>
7			

Tutorial Overview

Systemvue: Electronic design automation (EDA) environment for electronic system-level (ESL) design which provides unique value to RF and DSP implementation.

Target: System design and simulation of homodyne and heterodyne receivers, QPSK transmitter and FMCW radar.

What will you learn?

- Intuitive system design: drag and drop functionality
- Fast-track RF application learning: Inbuilt component libraries (e.g. RF design kit) and data sheets
- Practical knowledge: System parameter simulation e.g. gain, noise figure, dynamic range, 2nd and 3rd order nonlinearities, eye diagram etc.

