

Power Amplifiers for Wireless Applications

Everyone is going wireless these days. From Google's wireless network in Mountain View, to Sprint/Nextel's use of WiMax for their wireless business, to cities like San Francisco and Philadelphia planning low-cost wireless networks, to the government's transformational communications initiative – the desire to be "untethered" is widespread. This wireless vision has gone way past voice on cell phones and now includes laptop mobility, internet access on cell phones, mobile navigation devices, battlefield connectivity, and other applications.

Within these systems, the requirements for RF power are demanding. Specifically, the ability to get the required power into the small space dictated by mobile devices is a challenging task. Needless to say, the power amplifier can be, and often is, a critical if not an enabling component. Engineers need to be able to understand the factors driving these requirements as well as the tools and "weapons" at their disposal for solving these challenges

This short course gives an overview of key areas such as wireless applications being deployed and the state of power amplifier technologies and devices, and delves into details of power amplifier design techniques and packaging needed to meet these future challenges.

Please join us with our exciting line-up of speakers in exploring these challenging opportunities and learn about the tools and knowledge base that is required to meet them.

- "WiMax and the need for PA's," Roger Eline, Intel
- "Next Generation Satellites and the Need for PA's," Eric Butte Director, US Government Programs Space Systems/Loral
- "Power Amplifier Overview," Steve Cripps, Hywave Associates
- "mmWave CMOS PA's," Professor Ali Niknejad, Faculty Director of the Berkley Wireless Research Center, University of California, Berkeley
- "Design of Power Amplifiers Using High Voltage Breakdown GaN Devices," John Schumaker, Applications Engineering Manager, Eudyna Devices USA Inc
- "The Evolution of GSM Handset Power Amplifiers," Wayne Kennan, Manager, Power Amplifier Design, RFMD Scotts Valley Design Center
- "PA Packaging," Professor Joy Laskar, Schlumberger Chair in Microelectronics, Director of Georgia's Electronic Design Center (GEDC), Georgia Tech

Advance registration (before April 20)

\$50 for IEEE members

\$65 for non-Members

Includes lunch and preprints of the presentations

More information, and to register:

www.mtt-scv.org/may_mtg.html

IEEE SCV-CAS TUTORIAL

Broadband and RF Circuit Analysis and Design in CMOS Technology Part II

Saturday June 16, 2007 – 8:30 AM – 1:00 PM

at Cadence Design Systems – Bldg 5
2655 Seely Ave, San Jose

This tutorial, a continuation of the [Sept 2006](#) event, will familiarize engineering professionals with both classic and innovative new broadbanding techniques for CMOS technology amplifiers appropriate for state-of-the-art communication system applications, with a focus on **Distributed Amplifiers**. A unified circuit broadbanding strategy is discussed, as is a practical methodology for the monolithic realization of narrowband radio-frequency (RF) amplifiers. Because broadband and RF design necessarily entails the incorporation of suitable matching filters in signal flow paths, a reasonably extensive discussion of lossless filter architectures is incorporated in the tutorial. All theoretic and conceptual disclosures are verified through the results of realistic SPICE simulations.

Instructor: Dr. John Choma, Fellow, Scintera Networks, and Professor of EE & Systems Architecture Engineering, Univ of Southern California

Registration: 8:30 – 9:00 AM (includes pastries/coffee)

Sponsored lunch: 12:15 – 1:00 PM

Tutorial Outline:

9:00: "Introduction and Overview" by Dr. William Kao

9:15: "Tutorial Part III" by Dr. John Choma

10:45: "Tutorial Part IV" by Dr. John Choma

Topics: Overview of MOS Transistor Modeling; Noise Sources In NMOS and PMOS Devices; Gain and Bandwidth Optimization in Common Source Amplifiers; Broadband Architectures; Lossless Filters; Linearity Considerations

A CD of all lecture material and related notes will be provided to all attendees.

Registration Fee:

IEEE Member	\$40	Non-Member	\$50
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Registration Deadline June 2 (postmarked by June 2)

After June 2 – if Space Available, \$5.00 Surcharge

See full Tutorial Description for prerequisites and other details:

www.ewh.ieee.org/r6/scv/cas