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UNIVERSITY at QATAR

ELECTRICAL AND COMPUTER
ENGINEERING PROGRAM

THE ELECTRICAL & COMPUTER ENGINEERING PROGRAM PRESENTS

RFIC Transceivers for 3.5G/HSDPA Multi-band Cellular Systems: Architectures Overview and Challenges

Dr. Walid Ali-Ahmad

Monday, November 17, 2008
12 – 1 p.m. Followed by light lunch
Lecture Hall 144 / 1st floor

This talk presents an overview of modern radio transceiver architectures used in 3G/3.5G cellular handsets, such as EDGE, cdma2000 / 1xEV-DO, and WCDMA/HSDPA, plus discussion of key RF impairments related system challenges. It also overviews some current technology trends such as Sigma-Delta ADC based receiver and mostly all-digital transmitter architectures, which are being enabled by the current aggressive scaling of CMOS technology and the push toward full radio system-on-chip (SoC) integration.

Dr. Walid Y. Ali-Ahmad is a senior consultant for Mediatek Corp. RF division since Sep'07, leading the RF systems development of cellular RFICs; he is also a part-time faculty in the ECE department at the American University of Beirut. From Sept'04-'07, he was an associate professor in Electrical Engineering at AUB, where his research interests focused on multi-mode radios and millimeter-wave systems; he was involved with UCSD and Intel Corp. on a research project for the development of 24GHz phased-array integrated transceiver. Between June'97 and Sept'04, he was a Principal Member of Technical Staff at Maxim Integrated Products, Sunnyvale, CA. Before that, he worked at Cadence Design Systems and Anritsu Company in CA. Dr. Ali-Ahmad received his M.Sc. and Ph.D. degrees in Electrical Engineering from the University of Michigan in 1990 and 1993, respectively. He is a Senior IEEE member and a member of the RFIC TPC since 2004. He received two conference paper awards, has more than 35 publications in conferences, journals, and technical magazines in the area of radio design, and has given several talks at different IEEE workshops.



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