

Sunday, 5 June 2011

1:20 PM - 5:20 PM

WSK: Efficiency Enhancement Techniques of Power Amplifiers and Transmitters for Mobile Applications

Sponsors: RFIC, MTT-23, MTT-5, MTT-6

Organizers: Youngwoo Kwon, Seoul National University
Nick Cheng, Skyworks Solutions

Abstract: With the proliferation of data services and smart phones, mobile phone manufacturers are faced with unprecedented demands from mobile operators and consumers. In particular, transmitter thermal issues and battery life are two major challenges. Excessive current consumption of the power amplifiers often results in the overheating, which may even affect the industrial design of the phones. The added features in smart phones and extensive data usage call for frequent recharges. Thermal and battery issues will become increasingly difficult to solve at the phone level as the industrial design gets more complex and the data rates continue to increase. Efficiency improvement of power amplifiers and transmitters is the only solution. This workshop will explore novel design techniques and front-end topologies that enhance the efficiencies of transmitters and power amplifiers, and move on to the topical issue of “envelop tracking”, which has the potential for proliferation into handset applications. Growing interest in CMOS PAs will also be covered, focusing on design techniques that overcome the linearity and efficiency limitations of CMOS devices. Both wireless LAN and 2G/3G applications will be covered.

Front End Topologies and PAE Enhancement Techniques, James Young, Skyworks Solutions

Highly Efficient RF Front End Using Envelope Tracking Techniques, Don Kimball, University of California, San Diego

Design of Si-Based High-Efficiency RF Power Amplifiers and Polar Transmitters for Mobile Broadband Wireless Communications, Donald Lie, Texas Tech University

RF CMOS PAs for Mobile Communications, Songcheol Hong, KAIST, Korea

High Power, Highly Linear CMOS Power Amplifier for WLAN Applications, Ali Afsahi, Broadcom