



## Wireless Convergence — Your Phone is Not Just a Phone Anymore

Charles Persico, Senior Vice President of Engineering, Qualcomm Inc

A look at wireless convergence in the mobile phone market goes beyond voice to photography, video, gaming, music, multimedia broadcast, internet access, position location, VOIP, WiFi, Bluetooth to name several. It has only been a few years since voice-only cellular mobile phones have become ubiquitous and considered indispensable in our daily lives. What is the future direction for integration of multiple radios and concurrent operation between various protocols?



Charles Persico is Senior Vice President of Engineering at Qualcomm Inc. He is in charge of Qualcomm's RF, analog, and mixed signal IC design, product, and test engineering and responsible for more than a billion dollar revenue business.. He received his BS from Union College in electrical engineering in 1985 and MS from Syracuse University in electrical engineering in 1987. In 1985 he joined GE Avionics systems working on advanced radar systems. He also worked at Honeywell Space Systems on various satellite electronic systems. In 1991 he joined Philips Semiconductor and was involved in RFIC design for various cellular standards. He has been with Qualcomm since 1995.

## Technology Directions for Future RF Applications

Dwight C. Streit, Vice President, Electronics Technology, Northrop Grumman Space Technology

Recent advances in the performance and maturity of a number of key technologies are enabling a new generation of electronic systems for future RF applications. Advanced semiconductors, photonics, and nanotechnology are converging with new design, processing, and packaging schemes to revolutionize RF system performance. We present here an overview of the key technologies behind these achievements, and discuss their impact on future electronic systems.

Dwight Streit is Vice President, Electronics Technology, for Northrop Grumman Space Technology. He is responsible for the research and technology development required for advanced semiconductors, microelectronics, communications, and satellite payload electronics. Dr. Streit joined Northrop Grumman via the acquisition of TRW in 2002 and joined TRW Space & Electronics in 1987. He is an IEEE Fellow and a member of the National Academy of Engineering. He received his Ph.D. in electrical engineering from UCLA in 1986 and was the UCLA Engineering Alumnus of the Year in 2003.



## Panel Sessions

12:00–13:15 Monday PMA HCC 313C

### RFID: New Revolution or Remarketing of Existing Technologies in a New Package?

Moderator: Sayfe Kiaei, Arizona State University

Panelists: Reza Rofougaran, Broadcom Inc.; Ganesh K. Balachandran, Texas Instruments; Mitsuo Usami, Hitachi, Ltd.; Frank Mau-Chung Chang, UCLA; Robert Plana, LAAS-CNRS; Issy. Kipnis, Intel; Scott Chiu, Intel; John Adams, Freescale Inc.

This panel will focus on the development, architecture, applications, security, and system-level issues of RFIDs. New RFID technologies have the potential to revolutionize business processes and help create innovative end-user applications. This panel will discuss the future of RFID technologies and the potential impacts of this technology: What is unique and new in RFID? What is different from ZIGBEE and other 802.11 low-power solutions? Will it take the Bluetooth path? Is it a marketing hype or a reality? What are the RF-design challenges here?

12:00–13:15 Tuesday PTUA HCC 313C

### CMOS Millimeter-Wave MMIC: Real or Bubble?

Moderator: Hiroshi Kondoh, Hitachi Ltd.

Panelists: Sorin Voinigescu, University of Toronto; Rudolf Lachner, Infineon Technology; Huei Wang, National Taiwan University; Kenjiro Nishikawa, NTT; Tuneo Tokumitsu, Eudyna Devices; Herbert Zirath, Chalmers Univ. of Technology; Ali M. Niknejad, University of California Berkeley

CMOS would be the most promising device for millimeter applications. But, when will the millimeter-wave CMOS IC be a real product? What kinds of applications are expected? The panel will discuss the pros and cons of CMOS and other devices and will show technical trends and market forecasts.