Design considerations of high-performance RF power amplifier to meet the challenging requirements of 4G TD-LTE

Speaker: Dr. Yufeng Wang, Qorvo Inc. (RF Micro Devices + TriQuent)

Abstract

The time division flavour of LTE, known as TD-LTE, once thought to be of primary interest to the Chinese mobile market, is seeing increasingly strong adoption worldwide. TD-LTE provides a high data rate, high quality and low cost solution for the cellular industry, while it also brings challenges for mobile terminal RF design. Beginning with an overview of TD-LTE UE transmitter requirements, we examine the key challenges for the power amplifier module (PAM) from the perspective of designers, and review the possible RF front-end system architectures to address the co-existence and linearity issue. Then, trends are predicted in the development of multi-mode and multi-band configuration and envelope tracking (ET) areas, as well as device and technology development.

Biography of speaker: Dr. Yufeng Wang received Ph.D. from Southeast University (Nanjing, China) in 2007. From 2002 to 2007, he was involved in electronic system and CMOS IC design for implantable neural prosthesis devices to realize spinal injury neural function regeneration. Since 2007 he has been involved in cellular RF power amplifier design at RF Micro Devices and served as design lead of many key products, including GSM/GPRS TxM product family, 4G TD-LTE PAM products and 3G/4G MMB power amplifier platform. His current research interest is high-linearity RF front-end, GaAs/SiGe power amplifier, SOI/pHEMT switch and SAW/BAW integration. He is IEEE member. He was reviewer of TBioCAS (IEEE Transaction on Biomedical Circuits and Systems), Transactions of Tianjin University and 2014 ICCDS (International Conference on Circuits, Devices and Systems). Dr. Wang also serves as Technical Advisory Committee member of 2013-2015 EDI CON (Electronic Design Innovations Conference) held by Microwave Journal.