Title: An Intelligent Scalable RF Front-End Module for Narrow Band - IoT and 5G Cellular Communication Standards

TIME: May 17th 16:30
VENUE: Taizhou Hall Room114
SPEAKER: LIU Yi ， Professor and Ph.D. Supervisor of Fudan University and CAS
**Host:** Prof. Hongyu Yu

INTRODUCTION

LIU Yi received the MS and Ph.D. degrees from Tokyo University of Science, in 1994 and 1997 respectively. He joined the faculty of the Tokyo University of Science, in 1997. Then he worked as a visiting professor at UCLA (University of California, Los Angeles) from 1999 to 2004. After that, he joined Microchip as a senior research fellow and is IEEE senior member. Dr. LIU has more than ten years of experience in RF/microwave and wireless communications design/research, he is a "thousand talent program" expert as well, and his key career achievement to date involves designing the world's smallest WiFi Power Amplifier with Integrated 50 Ohms Input and Output Matching. He has prior experience teaching at UCLA and the Tokyo University of Science. Excellent communication skills, fluent in English, Japanese and Chinese.

Currently, he is a Professor and Ph.D. Supervisor at Fudan University and Chinese Academy of Sciences. He has conducted many research projects funded by UCLA, international companies and the Shanghai Foundation. He has received awards including 2016 Outstanding Contribution Award of the Chinese-American professor. His research areas include RF signal processing for the next wireless communications and natural language processing for artificial intelligence.

ABSTRACT

Fifth-generation cellular communication standards (5G) target Gb/s data-rates, pushing the industry beyond the sub-6GHz bands. Tens of GHz of spectrum are available in the frequency bands from 30 to 300GHz. To maintain acceptable link budgets with sufficient antenna apertures, arrays are typically required at these frequencies and electrical beam steering is needed to retain spatial coverage. For such complex systems, highly-integrated, low-cost and energy-efficient SoCs are desirable to enable volume deployment. Fin-FET technologies are an ideal candidate.
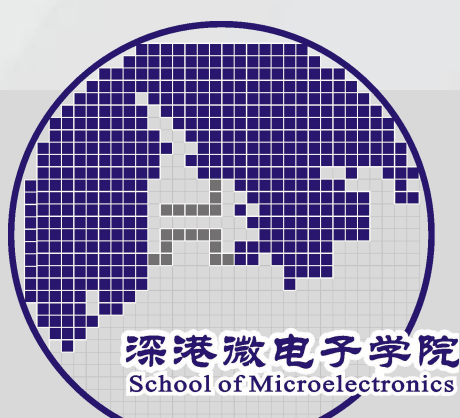
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