

Recent Advances in ADCs for Mobile Applications: 4G to 5G

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Abstract: In recent years, the ever growing demand for mobile data has led to rapid advances in communications technology. One of the key components that have enabled this advance are analog-to-digital converters, which have continually improved in dynamic range and bandwidth while steadily decreasing in die area and power. In a typical 4G LTE smartphone today, one can find over 8 high performance ADCs in just the downlink receive path alone. The industry is now preparing to transition to the next generation of mobile communications, 5G, which will see the introduction of mm-Wave spectrum usage and beamforming. A new generation of ADCs will need to be developed to support the new standards. This talk will focus on the evolution of ADC technology to be used in 5G and will also discuss related topics such as RF downlink system planning and process technology trends.

Biography: Stacy Ho received his SB and SM degrees in electrical engineering from MIT in 1992. From 1992-2001 he was with the High Speed Converter Group of Analog Devices, where he designed high-speed CMOS pipeline ADCs for imaging and communication systems. In 2001, he joined the Communications Division of ADI, where he designed RF front-end and baseband circuits for GSM/EDGE. Since 2008, he has been with MediaTek, where he is currently Deputy Director for Analog Circuit Design leading the development of advanced data converters for mobile communications. He has authored or co-authored several converter papers at VLSI and ISSCC, and is currently serving on the technical program committee of the VLSI Circuits Symposium.

Hosted by Prof. Hossein Hashemi, Prof. Mike Chen, and Prof. Mahta Moghaddam. Organized and hosted by Tzu-Fan Wu.