

Call for Papers
IEEE Signal Processing Society
IEEE Journal of Selected Topics in Signal Processing (J-STSP)

Special Issue on DSP Techniques for RF/Analog Circuit Impairments

Recent advances in digital processing capabilities and VLSI technology scaling, fueled by Moore's law, have widened the gap between digital and analog circuits in terms of their performance/complexity/cost tradeoffs. This trend is projected to become even more significant in the future. Radio Frequency (RF) impairments in analog circuits are mainly due to fabrication process variations which are difficult to predict or control, increase with fabrication technology down scaling, and can severely limit the achievable performance. In addition, System-on-Chip (SoC) orientation brings increased levels of integration putting RF and digital signal processing not only in the same package but integrating them on the same die. These considerations have spurred recent research activities in the signal processing and circuits technical communities on effective digital baseband compensation techniques for "dirty" RF/analog circuits. The objective of this inter-disciplinary special issue is to highlight the important role of digital signal processing techniques in understanding and mitigating RF/analog circuit impairments.

Original papers, previously unpublished and not currently under review by another journal, are solicited for this special issue. Topics of interest include, **but are not limited to** :

- Non-linearity and power efficiency issues in transmit high-power amplifiers (HPA) and receive low-noise amplifiers (LNA)
- In-phase/Quadrature (I/Q) imbalance and non-linearity issues in mixers
- Phase noise and frequency offset issues in oscillators
- Precision, sampling rate, dynamic range, non-linearity issues in Analog-to-Digital (A/D) and Digital-to-Analog (D/A) converters
- DC offset compensation in communication receivers
- Digital post- and pre-compensation of analog front-end characteristics, including frequency-dependent I/Q mismatch
- Digital compensation for process- and temperature-based variations of front-end characteristics
- Applications to OFDM and MIMO systems
- Applications to UWB, WLAN, WiMAX, LTE, Cognitive Radio, and military communications

Submission information is available at <http://www.ece.byu.edu/jstsp>. Authors are required to follow manuscript submission guidelines to the IEEE Transactions on Signal Processing (T-SP) at <http://ewh.ieee.org/soc/sps/tsp/>. Submitted manuscripts will be peer reviewed according to the standard IEEE process.

Submission deadline : **June 1, 2008**

First round of reviews completed : September 15, 2008

Revised manuscripts due : November 1, 2008

Second round of reviews completed : January 1, 2009

Final manuscripts due : February 1, 2009

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