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Digital Design Solutions for Wireless Communications (ESSCIRC 2020 SSC-L special edition)

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Time: 16:00 - 17:00
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Chair(s): Liesbet Van Der Perre; *Katholieke Universiteit Leuven*
Atila Alvandpour; *Linköping University*

A Triple-Mode Cellular IoT SoC Achieving −136.8-dBm eMTC Sensitivity ..... Available on Xplore
Stefan Lippuner[2], Mauro Salomon[2], Matthias Korb[2], Michael Gautschi[1], Thomas Dellsperger[1], Stefan Altorfer[1], Jürgen Rogin[1], Samuel Willi[1], David Tschopp[1], Benjamin Weber[1], Qiuting Huang[2]
[1]ACP Advanced Circuit Pursuit AG, Switzerland; [2]Integrated Systems Laboratory, ETH Zürich, Switzerland

0.36mW, 52Mbps True Random Number Generator Based on a Stochastic Delta-Sigma Modulator ..... Available on Xplore
Sanjeev T Chandrasekaran, Vinay Elkoori Ghantala Karnam, Arindam Sanyal
University at Buffalo, United States

A Flexible Precision Multi-Format In-Memory Vector Matrix Multiplication Engine in 65 nm CMOS with RF Machine Learning Support ..... Available on Xplore
Mandovi Mukherjee, Yun Long, Jongseok Woo, Daehyun Kim, Nael Mizanur Rahman, Saurabh Dash, Saibal Mukhopadhyay
Georgia Institute of Technology, United States

A Wide Tuning Range Delay Element for Event-Driven Processing of Low-Frequency Signals in 28-nm FD-SOI CMOS ..... Available on Xplore
Angel de Dios González Santos[2], Antoine Frappé[1], Benoit Larras[1], Andreas Kaiser[1], Philippe Cathelin[2]
[1]ISEN-Junia/IEMN, France; [2]STMicroelectronics, France

Data Converters & Chip-to-Chip Interfaces (ESSCIRC 2020 SSC-L special edition)

Date: Friday, September 17, 2021
Time: 17:00 - 18:00
Room: TITANE 2
Chair(s): Mattias Palm; *Ericsson*
Turner Walker; *Nvidia Corporation*

21fJ/Step OTA-Less, Mismatch-Tolerant Continuous-Time VCO-Based Band-Pass ADC ..... Available on Xplore
Sanjeev T Chandrasekaran[2], Stefano Pietri[1], Arindam Sanyal[2]
[1]NXP Semiconductors N.V., United States; [2]University at Buffalo, United States

A 1.67-GSps Ti 10-Bit Ping-Pong SAR ADC with 51-dB SNDR in 16-nm FinFET ..... Available on Xplore
Davide Dermit[1], Mithlesh Shrivas[2], Keigo Bunsen[3], Jorge Lagos Benites[2], Jan Craninckx[2], Ewout Martens[2]
[1]arQana Technologies, Belgium; [2]imec, Belgium; [3]Sony Semiconductor Solutions Corporation, Japan

A 0.01-mm2 0.83-V Input Range SAR-Based Bridge-to-Digital Converter ..... Available on Xplore
Annamaria Fordymacka[1], Ivan O'Connell[2]
[1]ON Semiconductor, Ireland; [2]Tyndall National Institute, Microelectronic Circuits Centre Ireland, Ireland

A 0.38pJ/B Simplex and a 1.2pJ/B Full Duplex Chip-to-Chip Digital Communication Interface with Data Rate and Load Capacitance AdaptabilityAvailable on Xplore
Yuting Shen, Hanyue Li, Eugenio Cantatore, Pieter Harpe
Eindhoven University of Technology, Netherlands

A 10-Gbps Continuous-Time Linear Equalizer for mm-Wave Dielectric Waveguide Communication ..... Available on Xplore
Oscar Mattia[2], Mahmoud Sawaby[1], Kevin Zheng[3], Amin Arbabian[2], Boris Murmann[2]
[1]Samsung Semiconductor Inc., United States; [2]Stanford University, United States; [3]Xilinx, Inc., United States

A-SSCC 2020 Guest Invited Papers

Date: Tuesday, September 14, 2021
Time: 15:00 - 16:00
Room: TITANE 2
Chair(s): Andreia Cathelin; *STMicroelectronics*
Qiuting Huang; *ETH Zürich*

A Redistributable Capacitive Power Converter for Indoor Light-Powered Batteryless IoT Devices ..... Available on Xplore
Hao-Chung Cheng, Po-Han Chen, Po-Hung Chen
National Yang Ming Chiao Tung University, Taiwan

An Energy-Efficient GAN Accelerator with On-Chip Training for Domain Specific Optimization ..... Available on Xplore
Soyeon Kim, Sanghoon Kang, Donghyeon Han, Sangyeob Kim, Sangjin Kim, Hoi-Jun Yoo
Korea Advanced Institute of Science and Technology, Korea

Broad-Purpose In-Memory Computing for Signal Monitoring and Machine Learning Workloads ..... Available on Xplore
Saurabh Jain, Longyang Lin, Massimo Alioto
National University of Singapore, Singapore

A Time-Domain Computing-in-Memory Based Processor Using Predictable Decomposed Convolution for Arbitrary Quantized DNNs ..... Available on Xplore
Jianxun Yang[3], Yuyao Kong[2], Zhao Zhang[3], Zhuangzhi Liu[3], Jing Zhou[3], Yiqi Wang[3], Yonggang Liu[3], Chenfu Guo[3], Te Hu[3], Congcong Li[3], Leibo Liu[3], Jin Zhang[1], Shaojun Wei[3], Jun Yang[2], Shouyi Yin[3]
[1]Ingenic Semiconductor CO., China; [2]Southeast University, China; [3]Tsinghua University, China

A 6.4 nW 1.7% Relative Inaccuracy CMOS Temperature Sensor Utilizing Sub-Thermal Drain Voltage Stabilization and Frequency Locked Loop ..... Available on Xplore
Teruki Someya[2], A.K.M. Mahfuzul Islam[1], Kenichi Okada[2]
[1]Kyoto University, Japan; [2]Tokyo Institute of Technology, Japan