
FOREWORD

Special Section on Analog Circuit Techniques and Related Topics

Our world has changed sharply and drastically due to the COVID-19 pandemic, Digital Transformation (DX), and so on. Telecommunication technologies such as 5G (and beyond) and IoT will be the backbones of the future world, and people believe digital technology leads it. However, sensing, transmission, and other interfaces from/to the physical world are only made by analog technology. If those do not exist, the digital world looks like a pie in the sky. Of course, digital assist is a key technology for high-performance analog circuits, and such collaboration will be a future trend in circuit design.

It is my pleasure to publish this special section, “Analog Circuit Techniques and Related Topics” this time. This special section consists of an invited paper and two regular papers. The invited paper written by Dr. Masaru Kokubo describes high-speed and high-precision modulation PLLs. The practical essence of both wired and wireless applications is summarized.

The first paper is on the thermal noise analysis of ring amplifiers in cyclic ADCs. Theoretical analysis, simulations, and measured results are presented. The second is for THz imagers. Pixel variation characteristics and its calibration technique are described. These novel technologies would be a great help to all of the readers.

On behalf of the editorial committee of this special section, I would like to express my sincere appreciation to all the authors for their contributions and all the reviewers and the editorial committee members for their voluntary activities. Finally, I would like to express my special thanks to Mr. Yohei Nakamura, Prof. Hiroki Sato, and Ms. Asuka Maki for their hard work as secretary and liaison.

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Cosy Muto (*Senior Member*) received the B.E., M.E. and Ph.D. degrees in electronics from Nagaoka University of Technology, Japan, in 1985, 1987 and 1994, respectively. He served in Ground Self-Defense Force as a technology officer from 1987 to 1998. He had been with Takuma National College of Technology from 1998 to 2001, Kitakyushu Foundation for the Advancement of Industry, Science and Technology from 2002 to 2004, and Kyushu Institute of Technology from 2004 to 2009. He joined the Faculty of Education, Nagasaki University in 2009, and currently he is a professor. His research includes analog signal processing, analog circuits and technology education. He is a senior member of IEE Japan, a member of IEEE and The Japan Society of Technology Education.

