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Springer 1461407907

Reliability, Availability and Serviceability of Networks-on-Chip

By Érika Cota, Alexandre de Morais Amory, Marcelo Soares Lubaszewski

INTRODUCTION AND OVERVIEW

This book presents an overview of the issues related to the test, diagnosis and fault-tolerance of Network on Chip-based systems. It is the first book dedicated to the quality aspects of NoC-based systems and will serve as an invaluable reference to the problems, challenges, solutions, and trade-offs related to designing and implementing state-of-the-art, on-chip communication architectures.

The content covers the characteristics of NoC design, including topologies, structures, routers, wrappers, and protocols. It also provides a summary of terms used in the field and an overview of existing industrial and academic NoCs.

KEY TOPICS COVERED

The manual details the main aspects of testing NoC-based systems, starting with the testing of embedded cores where the NoC plays a crucial role. Key areas include:

- **Current Test Strategies:** Discusses the reuse of the network for core testing, test scheduling for NoC reuse, test access methods and interface, efficient reuse of the network, and power-aware and thermal-aware NoC-based SoC testing.
- **NoC Infrastructure Challenges:** Presents challenges and solutions for interconnects, routers, and network interface testing and diagnosis.
- **Fault Tolerance Techniques:** Explores techniques for NoC fault tolerance, such as error control coding, retransmission, fault location, and system reconfiguration.

This book serves as a single source reference for the latest research, consolidating information otherwise found in disparate journals and conference proceedings.

PRODUCT VISUAL

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Reliability, Availability and Serviceability of Networks-on-Chip

 Springer

This image displays the front cover of the book "Reliability, Availability and Serviceability of Networks-on-Chip". The cover features the title prominently in white text against a gradient background of purple, red, and blue. The authors' names, Érika Cota, Alexandre de Morais Amory, and Marcelo Soares Lubaszewski, are listed at the top. The Springer logo is visible at the bottom right corner.

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ABOUT THE AUTHORS

The book is authored by Érika Cota, Alexandre de Morais Amory, and Marcelo Soares Lubaszewski. Their collective expertise contributes to the comprehensive coverage of reliability, availability, and serviceability in Networks-on-Chip.

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