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Systems on Chip (SoCs) and Reliability: Challenging Issues

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Abstract
SoCs and microelectromechanical systems (MEMS) technologies could possibly enable in the next few years various space mission applications, medical imaging, remote sensing field, computer and IR vision, or other image processing applications. This paper is intended to inform non-SoC and non-MEMS technologists, researchers, and decision makers not only about the rich potential applications, but also too about some not yet solved important reliability key problems of reconfigurable SoCs. We still have limited knowledge on how such devices fail. Biggest challenge: cost effective, high volume packaging, self-healing SoCs.

Keywords: SoCs, MEMS, CMOS technology, embedded systems, reliability, failure mechanisms

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