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Autore	Prinzie Jeffrey
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Nota di contenuto	Introduction -- Radiation Effects in CMOS Technology -- Time-Domain Signal Processing -- Clock Synthesizers -- Single Shot Time-to-Digital Converters -- Low Jitter Clock Generators -- Radiation experiments on CMOS PLLs -- Radiation Hard Frequency Synthesizers -- Conclusion.
Sommario/riassunto	This book presents state-of-the-art techniques for radiation hardened high-resolution Time-to-Digital converters and low noise frequency synthesizers. Throughout the book, advanced degradation mechanisms and error sources are discussed and several ways to prevent such errors are presented. An overview of the prerequisite physics of nuclear interactions is given that has been compiled in an easy to understand chapter. The book is structured in a way that different hardening techniques and solutions are supported by theory and experimental data with their various tradeoffs. Based on leading-edge research, conducted in collaboration between KU Leuven and CERN, the European

Center for Nuclear Research Describes in detail advanced techniques to harden circuits against ionizing radiation Provides a practical way to learn and understand radiation effects in time-based circuits Includes an introduction to the underlying physics, circuit design, and advanced techniques accompanied with experimental data.