1.	Record Nr.	UNINA9910411935403321
	Autore	Passos Fábio
	Titolo	Automated Hierarchical Synthesis of Radio-Frequency Integrated Circuits and Systems : A Systematic and Multilevel Approach / / by Fábio Passos, Elisenda Roca, Rafael Castro-López, Francisco V. Fernández
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
	ISBN	3-030-47247-7
	Edizione	[1st ed. 2020.]
	Descrizione fisica	1 online resource (XIII, 189 p. 133 illus., 100 illus. in color.)
	Disciplina	621.38412
	Soggetti	Electronic circuits
		Electronics
		Microelectronics
		Microprocessors
		Circuits and Systems
		Electronics and Microelectronics, Instrumentation
		Processor Architectures
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Introduction -- RF Receiver Architectures -- Modeling and Synthesis of Radio-Frequency Integrated Inductors -- Systematic Design Methodologies for RF Blocks -- Systematic Circuit Design Methodologies with Layout Considerations -- Multilevel Bottom-up Systematic Design Methodologies -- Conclusions.
	Sommario/riassunto	This book describes a new design methodology that allows optimization-based synthesis of RF systems in a hierarchical multilevel approach, in which the system is designed in a bottom-up fashion, from the device level up to the (sub)system level. At each level of the design hierarchy, the authors discuss methods that increase the design robustness and increase the accuracy and efficiency of the simulations. The methodology described enables circuit sizing and layout in a complete and automated integrated manner, achieving optimized designs in significantly less time than with traditional approaches.

Describes an efficient and accurate methodology to design automatically RF systems, with guaranteed accuracy from the device to the system level; Discusses analytical and machine learning techniques for modelling integrated inductors and uses such models in synthesis approaches; Compares synthesis strategies for RF circuits based on bottom-up versus flat approaches; Discusses layout-aware bottom-up design methodologies for RF circuits; Discusses variability-aware bottom-up design methodologies for RF circuits; Describes multilevel bottom-up design methodologies from the device up to the system level.