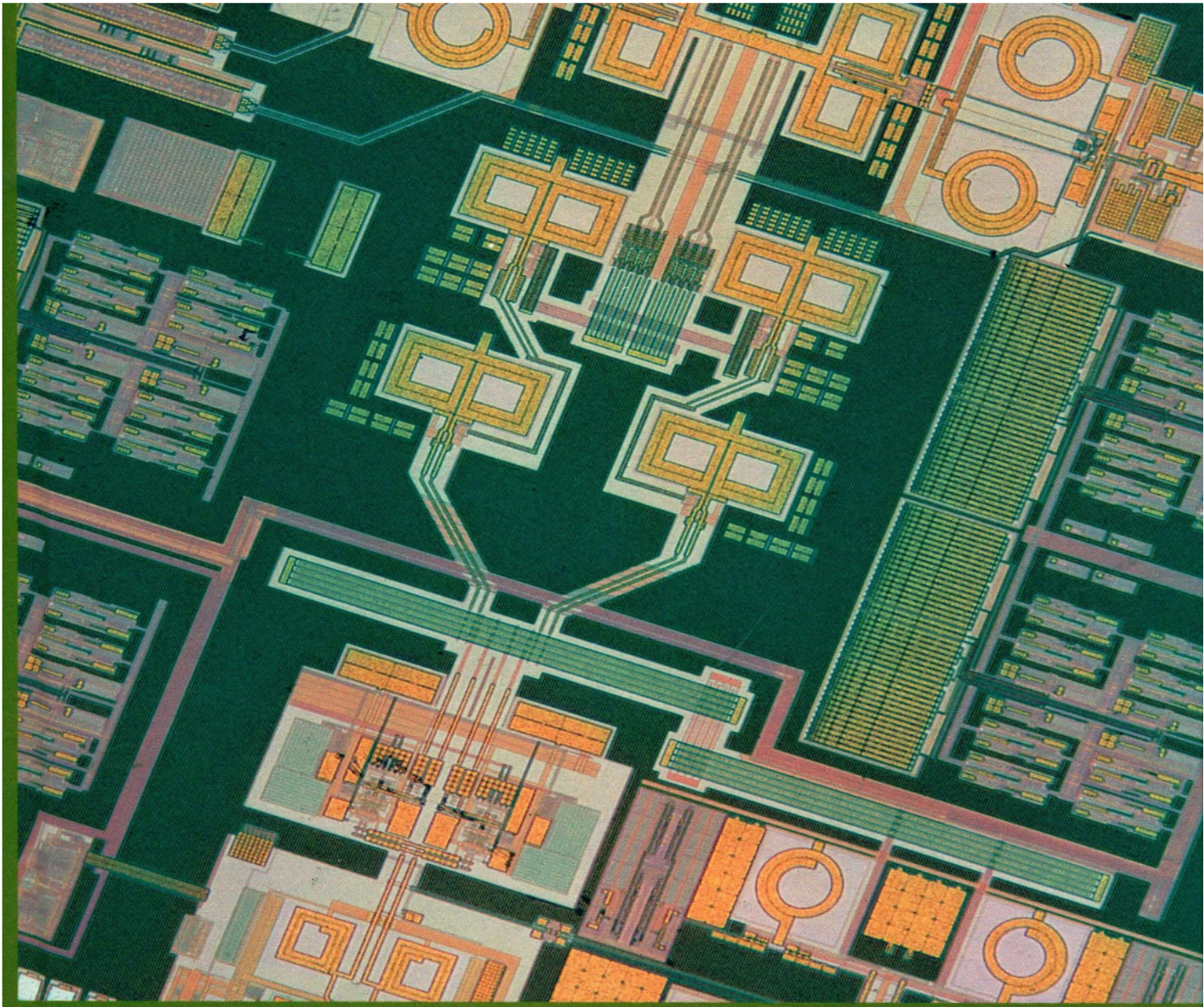

THOMAS H. LEE

The Design of CMOS Radio-Frequency Integrated Circuits

Second Edition

CAMBRIDGE

THE DESIGN OF CMOS RADIO-FREQUENCY INTEGRATED CIRCUITS

Second Edition

This is an expanded and thoroughly revised edition of Thomas H. Lee's acclaimed guide to the design of gigahertz RF integrated circuits.

In order to provide a bridge between system and circuit issues, there is a completely new chapter on the principles of wireless systems. The chapters on low-noise amplifiers, oscillators, and phase noise have been significantly expanded. The chapter on architectures now contains several examples of complete chip designs, including a GPS receiver and a wireless LAN transceiver, that bring together all the various theoretical and practical elements involved in producing a prototype chip. To complement the new material, every other section of the book has been revised and updated.

The book is packed with physical insights and design tips, and it includes a historical overview that sets the whole field in context. It contains hundreds of circuit diagrams and many homework problems. This is an ideal textbook for students taking courses on RF design and a valuable reference for practicing engineers.

Thomas H. Lee received his Sc.D. from the Massachusetts Institute of Technology and is an Associate Professor of Electrical Engineering at Stanford University. He has been a Distinguished Lecturer of both the IEEE Solid-State Circuits Society and the IEEE Microwave Theory and Techniques Society. He is the winner of four "best paper" awards at international conferences as well as a Packard Foundation Fellowship winner. Professor Lee is the author of more than a hundred technical papers and holds thirty U.S. patents. He has co-founded several companies, including Matrix Semiconductor.

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SECOND EDITION

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To my parents, who had no idea what they were starting when they bought me a pair of walkie-talkies for my sixth birthday

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