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	Sommario/riassunto	This book primarily focuses on the authors' research and practical achievements in the field of photonic integrated phased arrays in recent years. Firstly, a comprehensive introduction on the concept, operation principles, and research progress of photonic integrated phased arrays is introduced. Then, detailed explanations of the optical antenna and array design in photonic integrated phased arrays are given. Combined with design cases of silicon-based optical phased arrays with different scales, the design methods for achieving low sidelobes are deeply researched, and the test principle and design of photonic integrated phased arrays are elaborated. Finally, the design, implementation, and test of photonic integrated phased arrays are illustrated through a detailed case study on the development of a silicon-based optical

phased array chip and verify its short-distance space optical communication based on the chip. This book is dedicated to integrating the theory, design, processing, and test cases of photonic integrated phased arrays, and it provides a valuable reference for researchers and designers in the field of optical phased array technology. .