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Nota di contenuto	Basic Radar Analysis; Contents; Preface; Acknowledgments; Chapter 1: Radar Basics; 1.1 Introduction; 1.2 Radar Types; 1.3 Range Measurement; 1.4 Ambiguous Range; 1.5 Usable Range and Instrumented Range; 1.6 Range-Rate Measurement (Doppler); 1.7 Decibels; 1.8 dB Arithmetic; 1.9 Complex Signal Notation; 1.10 Radar Block Diagram; 1.11 Exercises; References; Chapter 2: Radar Range Equation; 2.1 Introduction; 2.2 Basic Radar Range Equation; 2.2.1 Derivation of ES; 2.2.1.1 The Transmitter; 2.2.1.2 The Antenna; 2.2.1.3 Effective Radiated Power; 2.2.1.4 Antenna Directivity. 2.2.1.5 The Target and Radar Cross Section; 2.2.1.6 Antenna Again; 2.2.1.7 Antenna Directivity Again; 2.2.1.8 Losses; 2.2.2 Derivation of EN; 2.3 A Power Approach to SNR; 2.4 Example 1; 2.5 Detection Range; 2.6 Search Radar Range Equation; 2.7 Example 2; 2.8 Radar Range Equation Summary; 2.9 Exercises; References; Appendix 2A: Derivation of Search.
Sommario/riassunto	This authoritative new resource presents fundamentals of radar analysis including the range equation, detection theory, ambiguity functions, antennas, receivers, SP, and chaff analysis for modern radars. This book addresses details behind the detection probability equations and origins radar engineers commonly use to perform signal processor analyses. This book consolidates discussions of receiver

design and analysis and treats areas of digital receivers not commonly found in other books. Packed with details on how to perform radar range equation and detection analyses, RCS modeling, ambiguity function generation and antenna pattern generation. This book also includes detailed analyses of coherent and non-coherent integration, design and analysis of analog and digital receivers, stretch processor implementation and SAR signal processor implementation. This resource also covers Basic STAP implementation and analysis as well as SLC design and implementation. This new resource is intended as a text for a series of courses in radar and as a theory and practice reference for practicing radar engineers. Software Included! This book is accompanied by MATLAB files on CD.