

1. Record Nr.	UNINA9910820759003321
Autore	Garg Ramesh <1945->
Titolo	Analytical and computational methods in electromagnetics // Ramesh Garg
Pubbl/distr/stampa	Boston, [Mass.], : Artech House, c2008
ISBN	1-59693-386-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (550 p.)
Collana	Artech House electromagnetic analysis series
Disciplina	621.30151 539.2
Soggetti	Electromagnetic waves - Mathematics Electromagnetism - Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Analytical and Computational Methods in Electromagnetics; Contents; Preface; CHAPTER 1: Basic Principles of Electromagnetic Theory; CHAPTER 2: Analytical Methods and Orthogonal Functions; CHAPTER 3: Green's Function; CHAPTER 4: Contour Integration and Conformal Mapping; CHAPTER 5: Fourier Transform Method; CHAPTER 6: Introduction to Computational Methods; CHAPTER 7: Method of Finite Differences; CHAPTER 8: Finite-Difference Time-Domain Analysis; CHAPTER 9: Variational Methods; CHAPTER 10: Finite Element Method; CHAPTER 11: Method of Moments APPENDIX A: Solution Methods for the Set of Simultaneous Equations APPENDIX B: Evaluation of Singular Integrals; About the Author; Index
Sommario/riassunto	Achieve optimal microwave system performance by mastering the principles and methods underlying today's powerful computational tools and commercial software in electromagnetics. This authoritative resource offers you clear and complete explanation of this essential electromagnetics knowledge, providing you with the analytical background you need to understand such key approaches as MoM (method of moments), FDTD (Finite Difference Time Domain) and FEM (Finite Element Method), and Green's functions. This comprehensive book includes all math necessary to master the material. Moreover, it features numerous solved problems that help ensure your

understanding of key concepts throughout the book. To keep you from being bogged down with complex mathematical details (vector calculus) and coding, this comprehensive volume places emphasis on the analysis of the scalar wave equation in Cartesian coordinates. The book also includes multiple choice questions, appropriate for self study or courses, that help clarify concepts without any mathematical burden. Packed with over 1,300 equations, most of the problems presented in the book can be solved using nothing more than calculator. CD-ROM-Included! Includes time-saving Matlab® source code for the problems presented in the book which can be easily modified to help you solve similar problems in the field.
