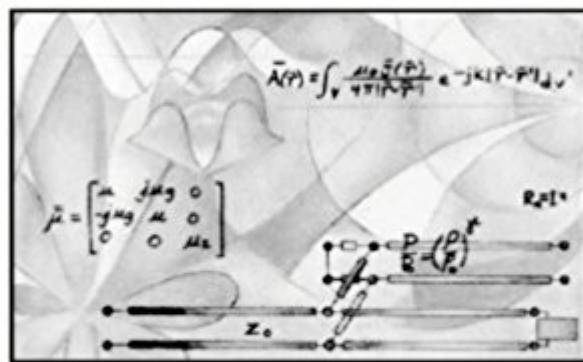


The book was found

# Electromagnetic Waves

## ELECTROMAGNETIC WAVES



David H. Staelin • Ann W. Morgenthaler • Jin Au Kong



## Synopsis

This introduction to electromagnetic waves emphasizes concepts, examples, and problem-solving techniques having wide applicability, and relies only on basic physics and mathematics -- rather than electrostatics, magnetostatics, and quasistatics. The focus is on generic problem-solving techniques -- both mathematical and physically-intuitive, and the presentation of basic electromagnetic theorems -- Poynting, energy, uniqueness, and reciprocity -- explained from a physical perspective. Progresses from simple wave propagation in unbounded free space to antenna and resonator design. Presents the fundamental concepts of plane waves, phasors, polarization, energy, power, and force early -- and repeatedly applies them throughout the text to problems with progressively more complex boundary conditions. For students and practicing engineers interested in electromagnetic wave phenomena.

## Book Information

Paperback: 562 pages

Publisher: Pearson; First edition edition (September 4, 1993)

Language: English

ISBN-10: 0132258714

ISBN-13: 978-0132258715

Product Dimensions: 6 x 1.3 x 8.9 inches

Shipping Weight: 1.8 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 stars 4 customer reviews

Best Sellers Rank: #627,883 in Books (See Top 100 in Books) #67 in Books > Engineering & Transportation > Engineering > Telecommunications & Sensors > Microwaves #125 in Books > Science & Math > Physics > Waves & Wave Mechanics #435 in Books > Science & Math > Physics > Electromagnetism

## Customer Reviews

This intermediate text emphasizes concepts, examples, and problem-solving techniques having wide applicability, and relies only on basic physics and mathematics -- rather than electrostatics, magnetostatics, and quasistatics. The focus is on generic problem-solving techniques -- both mathematical and physically-intuitive, and the presentation of basic electromagnetic theorems -- Poynting, energy, uniqueness, and reciprocity -- explained from a physical perspective.

As educators, David H. Staelin, Ann W. Morgenthaler, and Jin Au Kong saw a need for a book

presenting electromagnetic theory and applications in a clear, compact, and "user-friendly" manner relying only on basic physics and mathematics. The result is Electromagnetic Waves. This book provides thorough explanations and relevant, modern examples so that students and practicing engineers will find it a useful reference as well as a tool for self-teaching. It emphasizes basic concepts from both a physical and mathematical perspective. Successive chapters move from simple wave propagation in unbounded free space to the complexities of resonator and antenna design, revisiting basic concepts as each new topic is introduced. Electromagnetic Waves also makes connections between electromagnetics and simple equivalent circuit models wherever possible. The book exposes its readers to a considerable array of mathematical tools as well, ranging from orthogonal function expansions to perturbation techniques and duality, but physical intuition and approximate problem-solving techniques are also emphasized.

One of the best E&M books I've ever read. Very clear derivations, concise, covers many useful topics. I usually rent book and rarely buy them, but I bought this one! Miles ahead of the intro E&M textbooks. You should have some background of complex exponentials before reading this, but you don't need to know too much about complex numbers.

A well written textbook on Electromagnetic waves. Helped me ace the SAT Subject test!

Seriously, this is a great book for the coverage of the subject matter. But you need to know what the heck you're doing with EM waves. It is not a book for beginners - not even close. I liked it because they get right to the point, talking about the subject matter. They waste no time in the complex math - they assume you can figure that part out on your own. So if your linear algebra and partial differential equations skills are weak, you'll have trouble. Mine were a little weak and it took me a while to plow through the book. Actually, truth be told, they're much better now that I was forced to go figure that stuff out on my own. Side benefit I guess. My only regret is that I wish they had a few more examples, or at least that the examples were more - normal, maybe? Exotic example problems are interesting, but sometimes you just want to see a basic example so that you can get your homework done.

Prof Staelin was a wonderful instructor and this text is a tribute to his skills. It is one of the most readable and comprehensive EMT texts available and reads almost like a novel. Its target audience is that of the engineer and it delves into areas that many an engineer will spend time in. The

development of waveguides and transmission lines is brilliant and simply stated and it allows the engineer to see what the many applications may be. As EMT has somewhat fallen behind this text I believe will remain a valuable contribution to the field.

[Download to continue reading...](#)

EMP: Electromagnetic Pulse. Protect Your Family and Survive Long After the EMP (Prepping, Survival, Homesteading, Preparedness, EMP, Electromagnetic pulse) Causality, Electromagnetic Induction, and Gravitation: A Different Approach to the Theory of Electromagnetic and Gravitational Fields, 2nd edition Electromagnetic Wave Propagation, Radiation, and Scattering: From Fundamentals to Applications (IEEE Press Series on Electromagnetic Wave Theory) Electromagnetic Waves New Waves in Philosophical Logic (New Waves in Philosophy) New Waves in Epistemology (New Waves in Philosophy) Radiation Nation: Fallout of Modern Technology - Your Complete Guide to EMF Protection & Safety: The Proven Health Risks of Electromagnetic Radiation (EMF) & What to Do Protect Yourself & Family EMP: Electromagnetic Pulse: Prepping for Tomorrow Series Automotive Electromagnetic Compatibility (EMC) EMP: Electromagnetic Pulse (Prepping For Tomorrow Book 1) Electromagnetic Theory: Volume 2 Inverse Acoustic and Electromagnetic Scattering Theory (Applied Mathematical Sciences) Foundations of Electromagnetic Theory (4th Edition) Faraday, Maxwell, and the Electromagnetic Field: How Two Men Revolutionized Physics Overpowered: The Dangers of Electromagnetic Radiation (EMF) and What You Can Do about It Electromagnetic Fields Principles of Optics: Electromagnetic Theory of Propagation, Interference and Diffraction of Light Theory and Computation of Electromagnetic Fields (Wiley - IEEE) Electromagnetic Field Theory Fundamentals Handbook of Biological Effects of Electromagnetic Fields

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)