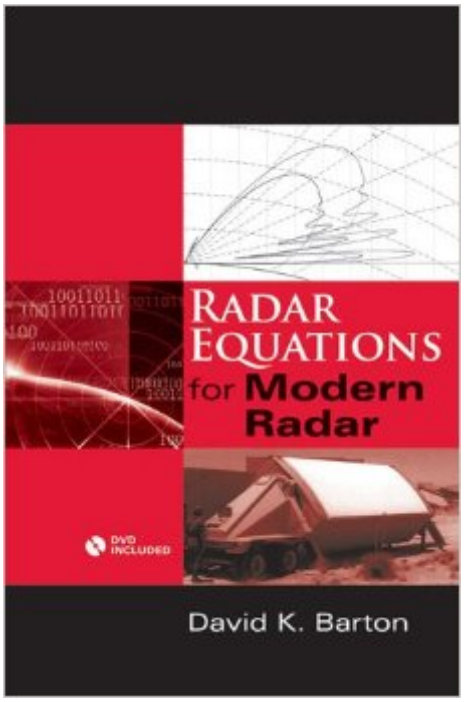
# Radar Equations For Modern Radar (Artech House Radar)



## Synopsis

Based on the classic Radar Range-Performance Analysis from 1980, this practical volume extends that work to ensure applicability of radar equations to the design and analysis of modern radars. This unique book helps you identify what information on the radar and its environment is needed to predict detection range. Moreover, it provides equations and data to improve the accuracy of range calculations. You find detailed information on propagation effects, methods of range calculation in environments that include clutter, jamming and thermal noise, as well as loss factors that reduce radar performance. This invaluable book is supported with nearly 200 illustrations and over 430 equations.Contents: Background. Search Radar Equation. Radar Equations for Clutter and Jamming. Detectability Factor. Beamshape Loss. Noise Temperature. Atmospheric Effects. Pattern-Propagation Factor. Clutter and Jamming. Loss Factors in the Radar Equation.

## Book Information

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Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (2 customer reviews)

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## Customer Reviews

Are you a radar engineer? If you are, then this book is for you. Author David K. Barton, has done an outstanding job of writing a book that ensures the applicability of radar equations to design and analyze modern radars; to identify what information on the radar and its environment is needed to predict detection range; and, to provide equations and data to improve the accuracy of range calculations.Author Barton, begins by reviewing the steps by which the radar equation was developed, and discusses its evolution to forms that can be applied to analysis and design of modern radar systems. Next, the author deals with the search radar equation, which is a

modification of the basic equation that allows one to avoid the process of generating many alternative designs and testing them to see which can meet a specified objective. Then, he discusses how the typical sources of clutter applies to radars whose targets are manmade objects such as aircraft, missiles, land vehicles, or vessels operating in the natural environment that contributes to the clutter. In addition, the author summarizes methods of calculating D(n) for different radar waveforms and target models. He continues by describing the beamshape loss for different target types and processing methods. The author then discusses why thermal and quasi-thermal noise cannot be eliminated or filtered out by any special circuitry or devices, while many manmade noises can be. Next, he summarizes and updates the data; discusses practical modeling and computational methods; and, presents the results in metric units and in graphical formats that improve reading accuracy and interpretation. Then, the author discusses both reflections from the surface and diffraction on paths that graze the surface.

for Differential Equations) Student Solutions Manual for Differential Equations: Computing and Modeling and Differential Equations and Boundary Value Problems: Computing and Modeling Transformations Of Coordinates, Vectors, Matrices And Tensors Part I: LAGRANGE'S EQUATIONS, HAMILTON'S EQUATIONS, SPECIAL THEORY OF RELATIVITY AND CALCULUS ... Mathematics From 0 And 1 Book 16) Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems, Second Edition (Artech House Remote Sensing Library)