



Radar and Laser Cross Section Engineering – third edition

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The concept of stealth is inherently appealing: the media would have us believe that it is possible to make an aircraft that is completely invisible to radar. The truth is more subtle, and this book explains in a detailed and quantitative manner how to assess the Radiofrequency (RF) and optical signatures of targets and how to minimise them. This is the third edition of a book that has already proved very popular. The book is organised in nine chapters and six appendices. The first two cover the basic concepts of Radar Cross Section (RCS). The next three describe the numerical methods used to compute target signatures in the frequency and time domains and

the geometrical theory of diffraction (GTD). Chapter 6 covers complex targets. Chapter 7 describes the techniques used to minimise RCS, and chapter 8 the techniques to measure RCS. Finally, chapter 9 covers the topic of laser cross section. The appendices provide detailed treatment of electromagnetics, coordinate systems, antenna theory, transmission lines, scattering matrices and properties of composite materials.

The style is clear and easy to understand, using graduate-level mathematics. Excellent use is made of diagrams to help explain the concepts. Full lists of relevant references are given. Each chapter has a set of problems, and supporting materials are made available on the AIAA website.

In summary, this book goes a long way towards demystifying the subject of stealth and will be of value to practising radar engineers as well as to academics and students who work in this domain.

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