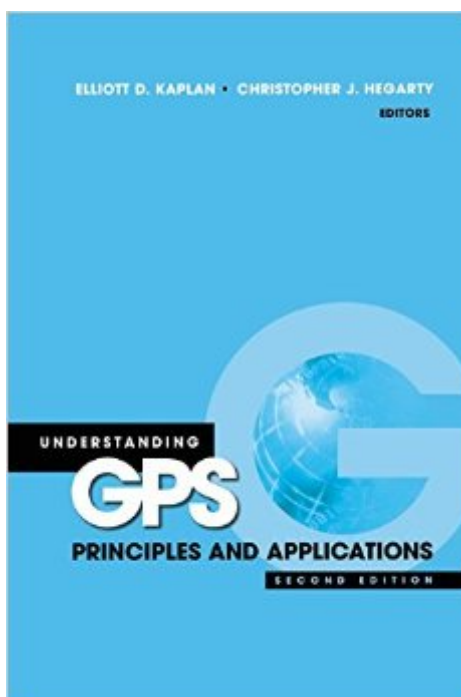


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# Understanding GPS: Principles And Applications, Second Edition



## Synopsis

This thoroughly updated second edition of an Artech House bestseller brings together a team of leading experts who provide a current and comprehensive treatment of the Global Positioning System (GPS). The book covers all the latest advances in technology, applications, and systems. The second edition includes new chapters that explore the integration of GPS with vehicles and cellular telephones, new classes of satellite broadcast signals, the emerging GALILEO system, and new developments in the GPS marketplace. This single-source reference provides a quick overview of GPS essentials, an in-depth examination of advanced technical topics, and a review of emerging trends in the GPS industry.

## Book Information

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## Customer Reviews

[A review of the SECOND EDITION, 2005.]In the last 15 years, GPS has moved from an expensive and specialised application to a mass consumer market. There are numerous books on GPS; mostly directly at that mass readership. These typically concern how to use a device with a GPS receiver. By contrast, this book is meant for the engineer who has to design such a device. It is a compendium of technical papers covering many aspects you are likely to need. And undoubtedly some you won't, which should be reassuring. Because it means that you do not have to read all of this book for it to be useful. The sensitivity of the GPS satellites and the resultant GPS ground

resolution is amazing, as can be appreciated from some of the papers in the book. Due mostly to the stability of the satellites' orbits and their onboard atomic clocks. Chapter 7 describes how GPS requires corrections due to Einstein's Theory of General Relativity! Not just Special Relativity. As a physicist, I found this fascinating. GPS is perhaps the first field where General Relativity is used, not to be tested, but as providing a necessary quantitative model for getting correct results. Akin to how Newton's Equations have been used for 300 years in ballistics. Granted, most readers will be engineers, who might find GR a trifle exotic. The book also has good coverage of the Russian GLONASS system. Perhaps for those who also want to use this for redundancy. Or to combine the signals from this with GPS for enhanced resolution.

Great reference not sure about it serving as a good text book as the section on Modulation, for instance, is not very detailed and not all that well put together. For instance, equations 4.7 does not follow from figure 4.5 if you use a repeating input sequence of +1, -1, +1, -1, etc. Also equation 4.5 is itself as defined an average, not an absolute value.

I wouldn't say I loved this book because a familiarity with acronyms and fairly high level maths is assumed. Having already researched this subject a little prior to getting this text it was still slow reading because I had to think about what each acronym meant, and there are lots of them in every paragraph, however such are the occupational hazards in this type of field. There is no list of abbreviations in this book either, so the first time an abbreviation is introduced and explained, you better remember it or you'll soon feel you're reading another language. Using it as a reference for cherry picking general concepts to the level required for the ICAO ATSEP syllabus, it was more than adequate, and it is always better to have too much info than too little. So maybe if I was more familiar with the abbreviations and had the time to understand the maths I might give it a 5 star rating. It certainly appears to be a very comprehensive overview and in many cases detailed analysis of the Global Navigation Satellite System. If your knowledge of WAAS, MSAS, EGNOS needs "augmenting", this could be the book for you.

Wonderful text. One of the few texts that gives you a complete history as well as sufficient detail of all the subsections and nuances. My suggestion is to start your learning experience with this book first. It will likely be the only one you need.

A clear exposition of GPS principles with chapters written by experts in their subject. On the

negative side, the writers sometimes assume too much knowledge on the part of the reader.

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