

**Fundamentals of Global Positioning System Receivers:  
A Software Approach, 2nd Edition**  
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All the expert guidance you need to understand, build, and operate GPS receivers

The Second Edition of this acclaimed publication enables readers to understand and apply the complex operation principles of global positioning system (GPS) receivers. Although GPS receivers are widely used in everyday life to aid in positioning and navigation, this is the only text that is devoted to complete coverage of their operation principles. The author, one of the foremost authorities in the GPS field, presents the material from a software receiver viewpoint, an approach that helps readers better understand operation and that reflects the forecasted integration of GPS receivers into such everyday devices as cellular telephones. Concentrating on civilian C/A code, the book provides the tools and information needed to understand and exploit all aspects of receiver technology as well as relevant navigation schemes:

- \* Overview of GPS basics and the constellation of satellites that comprise the GPS system
- \* Detailed examination of GPS signal structure, acquisition, and tracking
- \* Step-by-step presentation of the mathematical formulas for calculating a user's position
- \* Demonstration of the use of computer programs to run key equations
- \* Instructions for developing hardware to collect digitized data for a software GPS receiver
- \* Complete chapter demonstrating a GPS receiver following a signal flow to determine a user's position

The Second Edition of this highly acclaimed text has been greatly expanded, including three new chapters:

- \* Acquisition of weak signals
- \* Tracking of weak signals
- \* GPS receiver related subjects

Following the author's expert guidance and easy-to-follow style, engineers and scientists learn all that is needed to understand, build, and operate GPS receivers. The book's logical flow from basic concepts to applications makes it an excellent textbook for upper-level undergraduate and graduate students in electrical engineering, wireless communications, and computer science.

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