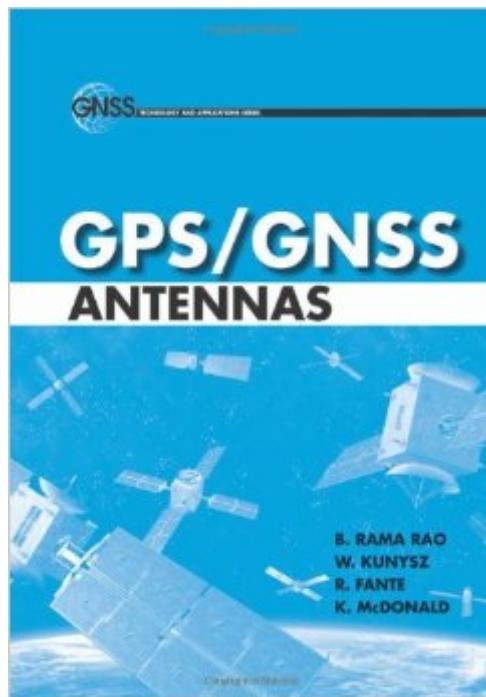


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# GPS/GNSS Antennas (GNSS Technology And Applications)



## Synopsis

This practical resource offers you the newest and most comprehensive treatment available of GPS/GNSS antennas, taking into account the requirements of modernized systems and recent and developing applications. The book considers a number of key applications and describes corresponding architectures and antenna details. You find important discussions on antenna characteristics, including theory of operation, gain, bandwidth, polarization, phase center, mutual coupling effects, and integration with active components. Moreover, you get expert guidance on the design of adaptive arrays and signal processing techniques used to mitigate interference such as jamming. Addressing critical GNSS antenna high precision requirements, this in-depth book explains the relationships between antenna gain, satellite visibility, geometric dilution of precision, and the carrier-to-noise density ratio. The book delineates requirements for both dual-band and tri-band antennas. You get detailed coverage of a wide range of antenna designs, including microstrip patch, quadrafilial helix, axial mode helix, spiral, inverted L, and planar inverted F antennas. Included is a discussion on new magnetic metamaterial substrates and other dielectric substrate materials. Further, this comprehensive book presents designs for very compact GNSS antennas for personal handheld devices and automobiles. **Contents:** Introduction to GNSS Antenna Performance Parameters. Fixed Reception Pattern Antennas (FRPA) and Directional Antennas. Multiband, Handset and Active Global Navigation Satellite Systems (GNSS) Antennas. Adaptive GPS Antennas. Ground Plane, Aircraft Fuselage, and other Platform Effects on GPS Antennas. Measurement of the Characteristics of GNSS Antennas. Antennas and Site Considerations for Precise Applications.

## Book Information

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## Customer Reviews

Are you interested in the most recent fast-moving developments in GNSS antennas? If you are, then this book is for you. Authors B. Rama Rao, W. Kunysz, R. Fante and K. McDonald, have done an outstanding job of writing a book that will allow the reader to obtain more details on the latest antenna designs. Authors Rao, Kunysz, Fante and McDonald, begin with a discussion on the important requirements for GNSS antennas. Next, the authors discuss fixed reception pattern antennas and high-gain directional antennas. The authors also focus on the three important classes of GNSS antennas: multiband antennas, handset antennas, and active antennas. Then, they continue with a description of the design and signal processing techniques used in adaptive antenna arrays for mitigating the effects of interference and jamming. The authors then describe in great detail the effects of the aircraft fuselage on the radiation pattern of a GNSS antenna. Next, they describe techniques used for measuring important antenna parameters such as Gain, polarization axial ratio, PCO and PCV, and group delay variation. Finally, they discuss typical antenna and site dependent errors that occur during very precise GNSS measurements and methods for avoiding such errors. This most excellent book allows the antenna engineer to prioritize the requirements needed for a particular application. More importantly, this great book allows the antenna engineer to select from the many types of antennas discussed, the one that best matches these needs.

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