Small-Aperture Radio Direction-Finding

Herndon H. Jenkins

Smallaperture Radio Directionfinding

Jay R. Sklar

Smallaperture Radio Directionfinding:

Small-aperture Radio Direction-finding Herndon H. Jenkins, 1991 Operating principles Performance difinition Direction finding error sources System level descriptions Representative operational small aperture Passive geolocation Subsystem considerations Calibration and test of direction finding systems **Radio Direction Finding and** Superresolution P. J. D. Gething, 1991 Enlarged and revised second edition Modern direction finders capable of measuring elevation angles as well as azimuth angles on the components of multi ray wavefields have become powerful tools for research in ionospheric physics and HF radio propagation The complexity of the problem of resolving closely spaced rays requires the combined use of wide aperture antenna arrays multichannel receiving systems and sophisticated digital An Investigation of a Digital Bearing Computer for a Small Aperture Radio Direction processing techniques **Finding System** Hubert Lee Grush, 1965 **Modern HF Signal Detection and Direction Finding** Jay R. Sklar, 2018-09-25 Detailed descriptions of detection direction finding and signal estimation methods using consistent formalisms and notation emphasizing HF antenna array sensing applications Adaptive antenna array technology encompasses many powerful interference suppression approaches that exploit spatial differences among signals reaching a radio receiver system Today worldwide propagation phenomenology occurring in the High Frequency HF radio regime has made such interference common In this book Jay Sklar a longtime researcher at MIT Lincoln Laboratory presents detailed descriptions of detection direction finding and signal estimation methods applicable at HF using consistent formalisms and notation Modern electronic system technology has made many of these techniques affordable and practical the goal of the book is to offer practicing engineers a comprehensive and self contained reference that will encourage more widespread application of these approaches The book is based on the author's thirty years of managing MIT Lincoln Laboratory work on the application of adaptive antenna array technologies to the sensing of HF communication signals After an overview of HF propagation phenomenology communication signal formats and HF receiver architectural approaches Sklar describes the HF propagation environment in more detail introduces important modulation approaches and signaling protocols used at HF discusses HF receiver system architectural features and addresses signal processor architecture and its implementation He then presents the technical foundation for the book the vector model for a signal received at an adaptive array antenna He follows this with discussions of actual signal processing techniques for detection and direction finding including specific direction finding algorithms geolocation techniques and signal estimation Illinois Technograph, 1959 **Electronic** Warfare Receivers and Receiving Systems Richard A. Poisel, 2015-06-01 Receivers systems are considered the core of electronic warfare EW intercept systems Without them the fundamental purpose of such systems is null and void This book considers the major elements that make up receiver systems and the receivers that go in them This resource provides system design engineers with techniques for design and development of EW receivers for modern modulations spread spectrum in

addition to receivers for older common modulation formats Each major module in these receivers is considered in detail Design information is included as well as performance tradeoffs of various components Major factors that influence the functioning of the modules are identified and discussed Key performance parameters are identified as well and approaches to achieving design goals are considered The Art and Science of Ultrawideband Antennas, Second Edition Hans G. Schantz.2015-06-01 This comprehensive treatment of ultrawideband UWB antennas and time domain microwave engineering serves as an invaluable practical reference for anyone involved in antenna and RF design work This authoritative volume enables readers to select the proper UWB antennas for their applications design and analyze UWB antennas and integrate these antennas in an RF system By applying time domain thinking to problems of practical interest the reader will not only learn how to build and analyze antennas but also understand them at the most fundamental level This second edition is updated and expanded throughout providing readers with a history of antennas numerous new problem sets and worked examples along with new information on plotting time domain field lines time domain reflectometry matching techniques and more This book also addresses system issues like spectral control and antenna efficiency **Antenna Systems and Electronic Warfare Applications** Richard Poisel, 2012 Antennas systems play a critical role in modern electronic warfare communications and radar Today s EW engineers need to have a solid understanding of the design principles of this technology and how antenna systems are used in the field This comprehensive book serves as a one stop resource for practical EW antenna system know how Supported with over 700 illustrations and nearly 1 700 equations this authoritative reference offers professionals detailed explanations of all the important foundations and aspects of this technology Moreover engineers get an in depth treatment of a wide range of antenna system applications. The book presents the key characteristics of each type of antenna including dipoles monopoles loops arrays horns and patches Practitioners also find valuable discussions on the limitations of antennas system performance in EW applications **Scientific and Technical** Aerospace Reports ,1995 Electronic Warfare Target Location Methods, Second Edition Richard Poisel, 2012 Worldwide growth of space communications has caused a rapid increase in the number of satellites operating in geostationary orbits causing overcrowded orbits This practical resource is designed to help professionals overcome this problem This timely book provides a solid understanding of the use of radio interferometers for tracking and monitoring satellites in overcrowded environments Practitioners learn the fundamentals of radio interferometer hardware including antennas receiving equipment signal processing and phase detection and measurement accuracies This in depth volume describes the nature of the targets to be tracked by the interferometer helping to clarify the movement of target satellites and what specific information has to be caught by the interferometer Additionally engineers find details on applications to practical cases of satellite tracking covering different types of interferometers recent technical developments orbital monitoring and safety control Official Gazette of the United States Patent Office United States. Patent Office.1964 **Underwater Acoustic Data**

Processing Y. T. Chan, 2012-12-06 This book contains the papers that were accepted for presentation at the 1988 NATO Advanced Study Institute on Underwater Acoustic Data Processing held at the Royal Military College of Canada from 18 to 29 July 1988 Approximately 110 participants from various NATO countries were in attendance during this two week period Their research interests range from underwater acoustics to signal processing and computer science some are renowned scientists and some are recent Ph D graduates The purpose of the ASI was to provide an authoritative summing up of the various research activities related to sonar technology. The exposition on each subject began with one or two tutorials prepared by invited lecturers followed by research papers which provided indications of the state of development in that specific area I have broadly classified the papers into three sections under the titles of I Propagation and Noise II Signal Processing and III Post Processing The reader will find in Section I papers on low frequency acoustic sources and effects of the medium on underwater acoustic propagation Problems such as coherence loss due to boundary interaction wavefront distortion and multipath transmission were addressed Besides the medium corrupting noise sources also have a strong influence on the performance of a sonar system and several researchers described methods of modeling these sources Localization and Tracking in GPS-less Environnments Richard Fuller, Xenofon D. Koutsoukos, 2009-09-29 This volume contains the proceedings of the Second International Workshop on Mobile Entity Localization and Tracking in GPS less Environments MELT 2009 held in Orlando Florida on September 30 2009 in conjunction with the 11th International Conference on Ubiquitous Computing Ubicomp 2009 MELT provides a forum for the presentation of state of the art technologies in mobile localization and tracking and novel applications of location based s vices MELT 2009 continued the success of the rst workshop in the series MELT 2008 which was held is San Francisco California on September 19 2008 in conjunction with Mobicom Location awareness is a key component for achieving context awareness cent years have witnessed an increasing trend towards location based services and applications. In most cases however location information is limited by the accessibility to GPS which is unavailable for indoor or underground fac ities and unreliable in urban environments Much research has been done in both the sensor network community and the ubiquitous computing community to provide techniques for localization and tracking in GPS less environments Novel applications based on ad hoc localization and real time tracking of bile entities are growing as a result of these technologies MELT brings together leaders from both the academic and industrial research communities to discuss challenging and open problems to evaluate pros and cons of various approaches to bridge the gap between theory and applications and to envision new research opportunities

Micro-Electronics and Telecommunication Engineering Devendra Kumar Sharma, Valentina Emilia Balas, Le Hoang Son, Rohit Sharma, Korhan Cengiz, 2020-04-02 This book presents selected papers from the 3rd International Conference on Micro Electronics and Telecommunication Engineering held at SRM Institute of Science and Technology Ghaziabad India on 30 31 August 2019 It covers a wide variety of topics in micro electronics and telecommunication engineering including micro

electronic engineering computational remote sensing computer science and intelligent systems signal and image processing and information and communication technology A Summary of Engineering Research University of Illinois (Urbana-Champaign campus). Engineering Experiment Station,1960 An Investigation of Space Diversity Radio Direction Finding Richard Lee Sydnor,1962 The object of this investigation is to determine how far apart radio direction finders should be placed in order to obtain statistically independent samples and to establish the number of radio direction finders to be included in the ensemble average The conclusions are based upon high frequency radio direction finder bearing data observations obtained from two small aperture radio finders separated by a variable distance Crossed Adcock type direction finders were used and the separation distance was varied from 1 32 to 1 4 mi The data were obtained over a period of approximately one yr during the time when conditions in the ionosphere were normal Author Journal of Research United States. National Bureau of Standards,1961 Effect of the Ionosphere on Space and Terrestrial Systems ,1978

Digital Signal Processing Kaluri V. Rangarao,Ranjan K. Mallik,2006-02-22 Digital signal processing is essential for improving the accuracy and reliability of a range of engineering systems including communications networking and audio and video applications Using a combination of programming and mathematical techniques it clarifies or standardizes the levels or states of a signal in order to meet the demands of designing high performance digital hardware Written by authors with a wealth of practical experience working with digital signal processing this text is an excellent step by step guide for practitioners and researchers needing to understand and quickly implement the technology Split into six self contained chapters Digital Signal Processing A Practitioner's Approach covers basic principles of signal processing such as linearity stability convolution time and frequency domains and noise descriptions of digital filters and their realization including fixed point implementation pipelining and field programmable gate array FGPA implementation Fourier transforms especially discrete DFT and fast Fourier transforms FFT case studies demonstrating difference equations direction of arrival DoA and electronic rotating elements and MATLAB programs to accompany each chapter A valuable reference for engineers developing digital signal processing applications this book is also a useful resource for electrical and computer engineering graduates taking courses in signal processing

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