Usrp2 Guide

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Getting Started with OpenBTS Springer Science & Business Media
A comprehensive and up-to-date one-stop reference for engineers working in power amplifier modeling or RF designers using power amplifier models.
The Folded Normal Distribution Artech House
All the expert guidance you need to understand, build, andoperate GPS receivers The Second Edition of this acclaimed publication enablesreaders to understand and apply the complex operation principles ofglobal positioning system (GPS) receivers. Although GPS receiversare widely used in everyday life to aid in positioning andnavigation, this is the only text that is devoted to completecoverage of their operation principles. The author, one of theforemost authorities in the GPS field, presents the material from asoftware receiver viewpoint, an approach that helps readers betterunderstand operation and that reflects the forecasted integrationof GPS receivers into such everyday devices as cellular telephones.Concentrating on civilian C/A code, the book provides the tools andinformation needed to understand and exploit all aspects ofreceiver technology as well as relevant navigation schemes: Overview of GPS basics and the constellation of satellites thatcomprise the GPS system Detailed examination of GPS signal structure, acquisition, andtracking Step-by-step presentation of the mathematical formulas forcalculating a user's position Demonstration of the use of computer programs to run keyequations Instructions for developing hardware to collect digitized datafor a software GPS receiver Complete chapter demonstrating a GPS receiver following asignal flow to determine a user's position The Second Edition of this highly acclaimed text has beengreatly 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 frombasic concepts to applications makes it an excellent textbook forupper-level undergraduate and graduate students in electricalengineering, wireless communications, and computer science.
Inside Radio: An Attack and Defense Guide John Wiley & Sons
This is the first book on the subject of multi-standard wireless receivers. It covers both the analysis and design aspects of CMOS radio receivers, with primary focus on receivers for mobile terminals. The subject of multi-standard data converter design for base stations is also covered.
Security and Privacy in Social Networks and Big Data "O'Reilly Media, Inc."
Secure Your Wireless Networks the Hacking Exposed Way Defend against the latest pervasive and devastating wireless attacks using the tactical security information contained in this comprehensive volume. Hacking Exposed Wireless reveals how hackers zero in on susceptible networks and peripherals, gain access, and execute debilitating attacks. Find out how to plug security holes in Wi-Fi/802.11 and Bluetooth systems and devices. You'll also learn how to launch wireless exploits from Metasploit, employ bulletproof authentication and encryption, and sidestep insecure wireless

hotspots. The book includes vital details on new, previously unpublished attacks alongside real-world countermeasures. Understand the concepts behind RF electronics, Wi-Fi/802.11, and Bluetooth Find out how hackers use NetStumbler, WiSPY, Kismet, KisMAC, and AiroPeek to target vulnerable wireless networks Defend against WEP key brute-force, aircrack, and traffic injection hacks Crack WEP at new speeds using Field Programmable Gate Arrays or your spare PS3 CPU cycles Prevent rogue AP and certificate authentication attacks Perform packet injection from Linux Launch DoS attacks using device driver-independent tools Exploit wireless device drivers using the Metasploit 3.0 Framework Identify and avoid malicious hotspots Deploy WPA/802.11i authentication and encryption using PEAP, FreeRADIUS, and WPA pre-shared keys

Wireless Sensor Networks BoD – Books on Demand

This book explore the use of new technologies in the area of satellite navigation receivers. In order to construct a reconfigurable receiver with a wide range of applications, the authors discuss receiver architecture based on software-defined radio techniques. The presentation unfolds in a user-friendly style and goes from the basics to cutting-edge research. The book is aimed at applied mathematicians, electrical engineers, geodesists, and graduate students. It may be used as a textbook in various GPS technology and signal processing courses, or as a self-study reference for anyone working with satellite navigation receivers.

Physical Layer Exploration Lab Using the NI USRP : Student Lab Manual McGraw Hill Professional

Giving a basic overview of the technologies supporting cognitive radio this introductory-level text follows a logical approach, starting with the physical layer and concluding with applications and general issues. It provides a background to advances in the field of cognitive radios and a new exploration of how these radios can work together as a network. Cognitive Radio Networks starts with an introduction to the fundamentals of wireless communications, introducing technologies such as OFDM & MIMO. It moves onto cover software defined radio and explores and contrasts wireless, cooperative and cognitive networks and communications. Spectrum sensing, medium access control and network layer design are examined before the book concludes by covering the topics of trusted cognitive radio networks and spectrum management. Unique in providing a brief but clear tutorial and reference to cognitive radio networks this book is a single reference, written at the appropriate level for newcomers as well as providing an encompassing text for those with more knowledge of the subject. One of the first books to provide a systematic description of cognitive radio networks Provides pervasive background knowledge including both wireless communications and wireless networks Written by leading experts in the field Full network stack investigation

Internet of Things and Sensors Networks in 5G Wireless Communications Springer Science & Business Media

Classical and Modern Direction of Arrival Estimation contains both theory and practice of direction finding by the leading researchers in the field. This unique blend of techniques used in commercial DF systems and state-of-the art super-resolution methods is a valuable source of information for both practicing engineers and researchers. Key topics covered are: Classical methods of direction finding Practical DF methods used in commercial systems Calibration in antenna arrays Array mapping, fast algorithms and wideband processing Spatial time-frequency distributions for DOA estimation DOA estimation in threshold region Higher order statistics for DOA estimation Localization in sensor networks and direct position estimation Brings together in one book classical and modern DOA techniques, showing the connections between them Contains contributions from the leading people in the field Gives a concise and easy- to- read introduction to the classical techniques Evaluates the strengths and weaknesses of key super-resolution techniques Includes applications to sensor networks

Secret Stairs Springer Science & Business Media

This book provides the practicing engineer with a concise listing of commercial and open-source modeling and simulation tools currently available including examples of implementing those tools for solving specific Modeling and Simulation examples. Instead of focusing on the underlying theory of Modeling and Simulation and fundamental building blocks for custom simulations, this book compares platforms used in practice, and gives rules enabling the practicing engineer to utilize available Modeling and Simulation tools. This book will contain insights regarding common pitfalls in network Modeling and Simulation and practical methods for working engineers.

Linux Security Secrets and Solutions MDPI

Software Defined Radio makes wireless communications easier, more efficient, and more reliable. This book bridges the gap between academic research and practical implementation. When beginning a project, practicing engineers, technical managers, and graduate students can save countless hours by considering the concepts presented in these pages. The author covers the myriad options and trade-offs available when selecting an appropriate hardware architecture. As demonstrated here, the choice between hardware- and software-centric architecture can mean the difference between meeting an aggressive schedule and bogging down in endless design iterations. Because of the author’s experience overseeing dozens of failed and successful developments, he is able to present many real-life examples. Some of the key concepts covered are: Choosing the right architecture for the market – laboratory, military, or commercial, Hardware platforms – FPGAs, GPPs, specialized and hybrid devices, Standardization efforts to ensure interoperability and portabilitym State-of-the-art components for radio frequency, mixed-signal, and baseband processing. The text requires only minimal knowledge of wireless communications; whenever possible, qualitative arguments are used instead of equations. An appendix provides a quick overview of wireless communications and introduces most of the concepts the readers will need to take advantage of the material. An essential introduction to SDR, this book is sure to be an invaluable addition to any technical bookshelf.

Programmable Gate Array John Wiley & Sons

Inside Radio: An Attack and Defense GuideSpringer

Fundamentals of Digital Communication Systems McGraw Hill Professional

The book starts with a completely fresh perspective on introduction to signals and continues to dealing with complex numbers without any complicated mathematics. The only skills you require are addition, multiplication and knowing what cos and sin are! The topics of discrete domains - both time and frequency - are explained in an intuitive manner such that traveling between the two through Discrete Fourier Transform (DFT) becomes quite natural. Furthermore, the concepts needed to implement modern digital communication systems such as convolution, filters and multirate signal processing are illustrated through the help of beautiful figures. Next, the book demystifies modulation and demodulation in a way easy to grasp even for a non-technical reader. The focus is on linear modulations, particularly Pulse Amplitude Modulation (PAM), Quadrature Amplitude Modulation (QAM) and Phase Shift Keying (PSK). Matched filtering is clarified in time, frequency and mathematical details in a story-like development. In addition, the topic of pulse shape filtering is covered in a depth and from angles never described anywhere before. The book continues with stethoscopes of a communication system, namely eye diagrams and scatter plots and towards the error rates of various modulation schemes along with the energy scaling factors of respective blocks. Finally, their spectral efficiencies are described taking into account the bandwidth, signal-to-noise ratio and data rates. This text is a simple way for you to enter at the beginner level and make your way up to wireless system design. Mathematics is included at a school level. I rely more on visualizing equations through beautiful figures. Therefore, you will encounter numerous figures throughout the text with logical and intuitive explanations. But you will not encounter any integrals, probability theory and detection/estimation theory. You will not even find any e or j of complex numbers either. The most complicated notation I have used is "sum everything from N1 to N2."

Science of Cyber Security Prentice Hall Professional

This book constitutes revised and selected papers from the 6th International Symposium on Security and Privacy in Social Networks and Big Data, SocialSec 2020, held in Tianjin, China, in September 2020. The 38 full papers presented in this volume were carefully reviewed and selected from a total of 111 submissions. The papers are organized according to the topical sections on big data security; social networks; privacy-preserving and security.

Selected Advances on Spectrum Sensing, Learning, and Security Approaches Academic Press

Software defined radio (SDR) is one of the most important topics of research, and indeed development, in the area of mobile and personal communications. SDR is viewed as an enabler of global roaming and as a unique platform for the rapid introduction of new services into existing live networks. It therefore promises mobile communication networks a major increase in flexibility and capability. SDR brings together two key technologies of the last decade - digital radio and downloadable software. It encompasses not only reconfiguration of the air interface parameters of handset and basestation products but also the whole mobile network, to facilitate the dynamic introduction of new functionality and mass-customised applications to the user's terminal, post-purchase. This edited book, contributed by internationally respected researchers and industry practitioners, describes the current technological status of radio frequency design, data conversion, reconfigurable signal processing hardware, and software issues at all levels of the protocol stack and network. The book provides a holistic treatment of SDR addressing the full breadth of relevant technologies - radio frequency design, signal processing and software - at all levels. As such it provides a solid grounding for a new generation of wireless engineers for whom radio design in future will assume dynamic flexibility as a given. In particular it explores * The unique demands of SDR upon the RF subsystem and their implications for front end design methodologies * The recent concepts of the 'digital front end' and 'parametrization' * The role and key influence of data conversion technologies and devices within software radio, essential to robust product design * The evolution of signal processing technologies, describing new architectural approaches * Requirements and options for software download * Advances in 'soft' protocols and 'on-the-fly' software reconfiguration * Management of terminal reconfiguration and its network implications * The concepts of the waveform description language The book also includes coverage of * Potential breakthrough technologies, such as superconducting RSFQ technology and the possible future role of MEMS in RF circuitry * Competing approaches, eg all-software radios implemented on commodity computing vs advanced processing architectures that dynamically optimise their configuration to match the algorithm requirements at a point in time The book opens with an introductory chapter by Stephen Blust, Chair of the ITU-R WP8F Committee and Chair of the SDR Forum presenting a framework for SDR, in terms of definitions, evolutionary perspectives, introductory timescales and regulation. Suitable for today's engineers, technical staff and researchers within the wireless industry, the book will also appeal to marketing and commercial managers who need to understand the basics and potential of the technology for future product development. Its balance of industrial and academic contributors also makes it suitable as a text for graduate and post-graduate courses aiming to prepare the next generation of wireless engineers.

Software Defined Radio John Wiley & Sons

This book discusses the security issues in a wide range of wireless devices and systems, such as RFID, Bluetooth, ZigBee, GSM, LTE, and GPS. It collects the findings of recent research by the UnicornTeam at 360 Technology, and reviews the state-of-the-art literature on wireless security. The book also offers detailed case studies and theoretical treatments – specifically it lists numerous laboratory procedures, results, plots, commands and screenshots from real-world experiments. It is a valuable reference guide for practitioners and researchers who want to learn more about the advanced research findings and use the off-the-shelf tools to explore the wireless world.

Cognitive Radio Communications and Networks Cambridge University Press

This book, written by experts from universities and major industrial research laboratories, is devoted to the very hot topic of cognitive radio and networking for cooperative coexistence of heterogeneous wireless networks. Selected highly relevant advanced research is presented on spectrum sensing and progress toward the realization of accurate radio environment mapping, biomimetic learning for self-organizing networks, security threats (with a special focus on primary user emulation attack), and cognition as a tool for green next-generation networks. The research activities covered include work undertaken within the framework of the European COST Action IC0902, which is geared towards the definition of a European platform for cognitive radio and networks. Communications engineers, R&D engineers, researchers, and students will all benefit from this complete reference on recent advances in wireless communications and the design and implementation of cognitive radio systems and networks.

A Single-Frequency Approach Springer Nature

Gain the essential grammar skills needed to communicate more confidently in Spanish! Developing a good grasp of grammar is key to mastering a foreign language. This bestselling guide provides comprehensive coverage of all the elements of Spanish grammar. Each grammatical concept is clarified and then illustrated with lively example sentences. More than 400 exercises provide you with plenty of practice to apply this knowledge in everyday conversation. The exercises are contextualized with scene-setting instructions in Spanish to ensure relevance to practice conversational and writing requirements. With this edition, you’ll also have access to the unique McGraw-Hill Education Language app featuring extensive audio

recordings and interactive quizzes. The app makes it easy to study on-the-go, test your comprehension, and hone your new language skills. The Ultimate Spanish Review and Practice, 4th Edition features: •More than 400 engaging exercises •A pre-test to identify your existing strengths and weaknesses•A post-test for assessing your progress•Flashcards for all the vocabulary lists with progress tracking•Extensive audio exercises to test your listening comprehension•Interactive quizzes, and more

Hacking Exposed Wireless McGraw-Hill Education

Cognitive Radio Communications and Networks gives comprehensive and balanced coverage of the principles of cognitive radio communications, cognitive networks, and details of their implementation, including the latest developments in the standards and spectrum policy. Case studies, end-of-chapter questions, and descriptions of various platforms and test beds, together with sample code, give hands-on knowledge of how cognitive radio systems can be implemented in practice. Extensive treatment is given to several standards, including IEEE 802.22 for TV White Spaces and IEEE SCC41 Written by leading people in the field, both at universities and major industrial research laboratories, this tutorial text gives communications engineers, R&D engineers, researchers, undergraduate and post graduate students a complete reference on the application of wireless communications and network theory for the design and implementation of cognitive radio systems and networks Each chapter is written by internationally renowned experts, giving complete and balanced treatment of the fundamentals of both cognitive radio communications and cognitive networks, together with implementation details Extensive treatment of the latest standards and spectrum policy developments enables the development of compliant cognitive systems Strong practical orientation – through case studies and descriptions of cognitive radio platforms and testbeds – shows how real world cognitive radio systems and network architectures have been built Alexander M. Wyglinski is an Assistant Professor of Electrical and Computer Engineering at Worcester Polytechnic Institute (WPI), Director of the WPI Limerick Project Center, and Director of the Wireless Innovation Laboratory (WI Lab) Each chapter is written by internationally renowned experts, giving complete and balanced treatment of the fundamentals of both cognitive radio communications and cognitive networks, together with implementation details Extensive treatment of the latest standards and spectrum policy developments enables the development of compliant cognitive systems Strong practical orientation – through case studies and descriptions of cognitive radio platforms and testbeds – shows how "real world" cognitive radio systems and network architectures have been built

Cognitive Radio Networks Springer Science & Business Media

Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req

A Software Approach John Wiley & Sons

The Latest Linux Security Solutions This authoritative guide will help you secure your Linux network--whether you use Linux as a desktop OS, for Internet services, for telecommunications, or for wireless services. Completely rewritten the ISECOM way, Hacking Exposed Linux, Third Edition provides the most up-to-date coverage available from a large team of topic-focused experts. The book is based on the latest ISECOM security research and shows you, in full detail, how to lock out intruders and defend your Linux systems against catastrophic attacks. Secure Linux by using attacks and countermeasures from the latest OSSTMM research Follow attack techniques of PSTN, ISDN, and PSDN over Linux Harden VoIP, Bluetooth, RF, RFID, and IR devices on Linux Block Linux signal jamming, cloning, and eavesdropping attacks Apply Trusted Computing and cryptography tools for your best defense Fix vulnerabilities in DNS, SMTP, and Web 2.0 services Prevent SPAM, Trojan, phishing, DoS, and DDoS exploits Find and repair errors in C code with static analysis and Hoare Logic

An Introduction to Network Modeling and Simulation for the Practicing Engineer CRC Press

This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-relate applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.