Infiniium Oscilloscope User Manual

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Negative-Refraction Metamaterials Springer
This book constitutes the refereed proceedings of the 13th International Conference on Security, Privacy, and Applied Cryptography Engineering, SPACE 2023, held in Roorkee, India, in December 2023. The 14 papers included in these proceedings were carefully reviewed and selected from 45 submissions. They focus on various aspects of security, privacy, applied cryptography, and cryptographic engineering.

Millimeter-Wave Radio-over-Fiber Links based on Mode-Locked Laser Diodes CRC Press
This book describes design techniques that can be used to mitigate crosstalk in high-speed I/O circuits. The focus of the book is in developing compact and low power integrated circuits for crosstalk cancellation, inter-symbol interference (ISI) mitigation and improved bit error rates (BER) at higher speeds. This book is one of the first to discuss in detail the problem of crosstalk and ISI mitigation encountered as data rates have continued beyond 10Gb/s. Readers will learn to avoid the data performance cliff, with circuits and design techniques described for novel, low power crosstalk cancellation methods that are easily combined with current ISI mitigation architectures.

An Introduction to Microwave Measurements KIT Scientific Publishing
Recent Methodology in Chemical Sciences provides an eclectic survey of contemporary problems in experimental, theoretical, and applied chemistry. This book covers recent trends in research with the different domain of the chemical sciences. The chapters, written by knowledgeable researchers, provide different insights to the modern-day research in the domain of spectroscopy, plasma modification, and theoretical and

computational analysis of chemical problems. It covers descriptions of experimental techniques, discussions on theoretical modeling, and much more.

Data Conversion Handbook

Newnes

Frontiers in Electronics reports on the most recent developments and future trends in the electronics and photonics industry. The issues address CMOS, SOI and wide band gap semiconductor technology, terahertz technology, and bioelectronics, providing a unique interdisciplinary overview of the key emerging issues.This volume accurately reflects the recent research and development trends: from pure research to research and development; and its contributors are leading experts in microelectronics, nanoelectronics, and nanophotonics from academia, industry, and government agencies.

Laser Induced Breakdown Spectroscopy (LIBS)

Artech House

· · PCI EXPRESS is considered to be the most general purpose bus so it should appeal to a wide audience in this arena. · Today's buses are becoming more specialized to meet the needs of the particular system applications,

building the need for this book. · Mindshare and their only competitor in this space, Solari, team up in this new book.

Handbook of Research on Developments and Trends in Wireless Sensor Networks: From Principle to Practice Springer Science & Business Media

Presents a comprehensive description of the theory and practical implementation of Doppler radar-based physiological monitoring This book includes an overview of current physiological monitoring techniques and explains the fundamental technology used in remote non-contact monitoring methods. Basic radio wave propagation and radar principles are introduced along with the fundamentals of physiological motion and measurement. Specific design and implementation considerations for physiological monitoring radar systems are then discussed in detail. The authors address current research and commercial development of Doppler radar based physiological monitoring for healthcare and other applications. Explains pros and cons of different Doppler radar architectures, including CW, FMCW, and pulsed Doppler radar Discusses nonlinear demodulation methods, explaining dc offset, dc information, center tracking, and demodulation enabled by dc cancellation Reviews advanced system architectures that address issues of dc offset, spectrum folding, motion interference, and range resolution Covers Doppler radar physiological measurements demonstrated to date, from

basic cardiopulmonary rate extractions to more involved volume assessments Doppler Radar Physiological Sensing serves as a fundamental reference for radar, biomedical, and microwave engineers as well as healthcare professionals interested in remote physiological monitoring methods.

Technology for Advanced Focal Plane Arrays of HgCdTe and AlGaN Springer

This book introduces the basic framework of advanced focal plane technology based on the third-generation infrared focal plane concept. The essential concept, research advances, and future trends in advanced sensor arrays are comprehensively reviewed. Moreover, the book summarizes recent research advances in HgCdTe/AlGaN detectors for the infrared/ultraviolet waveband, with a particular focus on the numerical method of detector design, material epitaxial growth and processing, as well as Complementary Metal-Oxide-Semiconductor Transistor readout circuits. The book offers a unique resource for all graduate students and researchers interested in the technologies of focal plane arrays or electro-optical imaging sensors.

Acoustical Imaging Newnes

Efficient mobile systems that allow for vital sign monitoring and disease diagnosis at the point of care can help combat issues such as rising healthcare costs, treatment delays in remote and resource-poor areas, and the global shortage of skilled medical personnel. Covering everything from sensors, systems, and software to integration, usability, and

regulatory challenges, Mobile Point-of-Care Monitors and Diagnostic Device Design offers valuable insight into state-of-the-art technologies, research, and methods for designing personal diagnostic and ambulatory healthcare devices. Presenting the combined expertise of contributors from various fields, this multidisciplinary text: Gives an overview of the latest mobile health and point-of-care technologies Discusses portable diagnostics devices and sensors, including mobile-phone-based health systems Explores lab-on-chip systems as well as energy-efficient solutions for mobile point-of-care monitors Addresses computer vision and signal processing for real-time diagnostics Considers interface design for lay healthcare providers and home users Mobile Point-of-Care Monitors and Diagnostic Device Design provides important background information about the design process of mobile health and point-of-care devices, using practical examples to illustrate key aspects related to instrumentation, information processing, and implementation.

Integrated Microsystems CRC Press

AFRICACRYPT 2009washeld during June 21 – 25,2009in Gammarth,Tunisia. After AFRICACRYPT 2008 in Casablanca, Morocco,it was the second inter- tional research conference in Africa dedicated to cryptography. The conference received70 submissions;four of these wereidenti?ed as irr- ular submissions. The remaining papers went through a careful doubly ano- mous review process. Every paper received at least three reports; papers with a ProgramCommittee member asco-authorreceived?vereports.After the review period,

25 papers were accepted for presentation. The authors were requested to revisetheirpapersbasedont hecommentsreceived.Theprogramwascompleted with invited talks by Antoine Joux, Ueli Maurer and Nigel Smart. Firstandforemostwe wouldlike to thank the members ofthe ProgramC- mittee for the manyhoursspent onreviewinganddiscussing the papers,thereby producing more than 600 Kb of comments. They did an outstanding job. We wouldalsolike to thank the numerousexternalreviewersfor their assistance.We are also indebted to Shai Halevi for the support provided for his excellent Web- Submission-and-Review software package. We also wish to heartily thank Sami Ghazali, the General Chair, and Sami Omar, the General Co-chair, for their - fortsintheor ganizationoftheconference.SpecialthanksgototheTu nisianM- istry of CommunicationTechnologies,the National Digital Certi?cationAgency, and the Tunisian Internet Agency for their support of the organization. Finally, we would like to thank the participants, submitters, authors and presenters who all together made AFRICACRYPT 2009 a great success. I hope that the AFRICACRYPT conference tradition has now taken ?rm root and that we will witness a fruitful development of academic research in cryptology in Africa.

NASA Tech Briefs Springer Science & Business Media

As rapid technological developments occur in electronics, photonics, mechanics, chemistry, and biology, the demand for portable, lightweight integrated microsystems is relentless. These devices are getting exponentially smaller, increasingly used in everything from video games, hearing aids, and pacemakers to more intricate biomedical engineering and military applications. Edited by Kris Iniewski, a revolutionary in the field of

advanced semiconductor materials, Integrated Microsystems: Electronics, Photonics, and Biotechnology focuses on techniques for optimized design and fabrication of these intelligent miniaturized devices and systems. Composed of contributions from experts in academia and industry around the world, this reference covers processes compatible with CMOS integrated circuits, which combine computation, communications, sensing, and actuation capabilities. Light on math and physics, with a greater emphasis on microsystem design and configuration and electrical engineering, this book is organized in three sections—Microelectronics and Biosystems, Photonics and Imaging, and Biotechnology and MEMs. It addresses key topics, including physical and chemical sensing, imaging, smart actuation, and data fusion and management. Using tables, figures, and equations to help illustrate concepts, contributors examine and explain the potential of emerging applications for areas including biology, nanotechnology, micro-electromechanical systems (MEMS), microfluidics, and photonics.

Handbook of Nanomaterials Properties IGI Global

Due to its impressive sensitivity, long baseline atom interferometry is an exciting tool for tests of fundamental physics. We are currently constructing a 10-meter scale apparatus to test the Weak Equivalence Principle (WEP) using co-located Rb85 and Rb87 atom interferometers. This apparatus aims to improve the current limit on WEP violation

100-fold, which illustrates the power of this technique. This scientific goal sets stringent requirements on the kinematic preparation of the atomic test masses, the interferometer laser wavefront and stability, as well as the electromagnetic and gravitational field homogeneity of the interferometer region. The efforts to control these sources of systematic error are discussed. Additionally, applications of long baseline atom interferometry to space-based sensors for geodesy and gravitational wave detection are presented.

Long Baseline Atom Interferometry John Benjamins Publishing

This comprehensive new handbook is a one-stop engineering reference covering data converter fundamentals, techniques, and applications. Beginning with the basic theoretical elements necessary for a complete understanding of data converters, the book covers all the latest advances made in this changing field. Details are provided on the design of high-speec ADCs, high accuracy DACs and ADCs, sample-and-hold amplifiers, voltage sources and current reference,noise-shaping coding, sigma-delta converters, and much more.

Security, Privacy, and Applied Cryptography Engineering John Wiley & Sons

This book constitutes the refereed proceedings of the 14th International Conference on Field-Programmable Logic, FPL 2003, held in Leuven, Belgium in August/September 2004. The 78 revised full papers, 45 revised short papers, and 29 poster abstracts presented together with 3 keynote contributions and 3 tutorial summaries were carefully reviewed and selected from 285 papers submitted. The

papers are organized in topical sections on organic and biologic computing, security and cryptography, platform-based design, algorithms and architectures, acceleration application, architecture, physical design, arithmetic, multitasking, circuit technology, network processing, testing, applications, signal processing, computational models and compiler, dynamic reconfiguration, networks and optimisation algorithms, system-on-chip, high-speed design, image processing, network-on-chip, power-aware design, IP-based design, co-processing architectures, system level design, physical interconnect, computational models, cryptography and compression, network applications and architecture, and debugging and test.

PCI Express System Architecture **KIT Scientific Publishing**

Capacitive micromachined ultrasonic transducers (CMUTs), have been widely studied in academia and industry over the last decade. CMUTs provide many benefits over traditional piezoelectric transducers including improvement in performance through wide bandwidth, and ease of electronics integration, with the potential to batch fabricate very large 2D arrays with low-cost and high-yield. Though many aspects of CMUT technology have been studied over the years, packaging the CMUT into a fully practical system has not been thoroughly explored. Two important interfaces of packaging that this thesis explores are device encapsulation (the interface between CMUTs and patients) and full electronic integration of large scale 2D

arrays (the interface between CMUTs and electronics). In the first part of the work, I investigate the requirements for the CMUT encapsulation. For medical usage, encapsulation is needed to electrically insulate the device, mechanically protect the device, and maintain transducer performance, especially the access of the ultrasound energy. While hermetic sealing can protect many other MEMS devices, CMUTs require mechanical interaction to a fluid, which makes fulfilling the previous criterion very challenging. The proposed solution is to use a viscoelastic material with the glass-transition-temperature lower than room temperature, such as Polydimethylsiloxane (PDMS), to preserve the CMUT static and dynamic performance. Experimental implementation of the encapsulated imaging CMUT arrays shows the device performance was maintained; 95 % of efficiency, 85% of the maximum output pressure, and 91% of the fractional bandwidth (FBW) can be preserved. A viscoelastic finite element model was also developed and shows the performance effects of the coating can be accurately predicted. Four designs, providing acoustic crosstalk suppression, flexible substrate, lens focusing, and blood flow monitoring using PDMS layer were also demonstrated. The second part of the work, presents contributions towards the electronic integration and packaging of large-area 2-D arrays. A very large 2D array is appealing for it can enable advanced novel imaging

applications, such as a reconfigurable array, and a compression plate for breast cancer screening. With these goals in mind, I developed the first large-scale fully populated and integrated 2D CMUTs array with 32 by 192 elements. In this study, I demonstrate a flexible and reliable integration approach by successfully combining a simple UBM preparation technique and a CMUTs-interposer-ASICs sandwich design. The results show high shear strength of the UBM (26.5 g), 100% yield of the interconnections, and excellent CMUT resonance uniformity ([lowercase Sigma] = 0.02 MHz). As demonstrated, this allows for a large-scale assembly of a tile-able array by using an interposer. Interface engineering is crucial towards the development of CMUTs into a practical ultrasound system. With the advances in encapsulation technique with a viscoelastic polymer and the combination of the UBM technique to the TSV fabrication for electronics integration, a fully integrated CMUT system can be realized.

Gallium Oxide Cambridge University Press The book has two intentions. First, it assembles the latest research in the field of medical imaging technology in one place. Detailed descriptions of current state-of-the-art medical imaging systems (comprised of x-ray CT, MRI, ultrasound, and nuclear medicine) and data processing techniques are discussed. Information is provided that will give interested engineers and scientists a solid foundation from which to build with

additional resources. Secondly, it exposes the reader to myriad applications that medical imaging technology has enabled.

Resonant Behaviour of Pulse Generators for the Efficient Drive of Optical Radiation Sources Based on Dielectric Barrier Discharges Springer Science & Business Media

Over the past two decades, international trade agreements such as GATT and NAFTA have lowered international trade barriers. At the same time, the information revolution has fueled profound shifts in the ways companies conduct business and communicate with their customers, and worldwide acceptance of the ISO 9000 standard has established the notion that quality must be defined in terms of customer satisfaction. Falling trade barriers and rising quality standards have made linguistic and cultural issues increasingly important. To successfully compete in today's global on-demand economy, companies must localize their products and services to fit the needs of the local market in terms of language, culture, functionality, work practices, as well as legal and regulatory requirements. In recognition of the growing importance of localization, this volume explores a certain number of key issues, including: Return on investment and the localization business case Localization cost drivers and cost-containment strategies Localization quality and customer-focused quality management Challenges posed by

localization of games, including Massively Multiplayer Online Role-Playing Games (MMORPGs) Using a meta-language to facilitate accurate translation of disembodied content The case for managing source-language terminology Terminology management in the localization process Reconciling industry needs and academic objectives in localization education Localization standards and the commoditization of linguistic information The creation and application of language industry standards Rethinking customer-focused localization through user-centered design Moving from translation reuse to language reuse

Field Programmable Logic and Application
CRC Press

Advances in electronics have pushed mankind to create devices, ranging from - credible gadgets to medical equipment to spacecraft instruments. More than that, modern society is getting used to—if not dependent on—the comfort, solutions, and astonishing amount of information brought by these devices. One ?eld that has continuously bene?tted from those advances is the radio frequency integrated c- cuit (RFIC) design, which in its turn has promoted countless bene?ts to the mankind as a payback. Wireless communications is one prominent example of what the - vances in electronics have enabled and their consequences to our daily life. How could anyone back in the eighties think of the possibilities opened by the wireless local area

networks (WLANs) that can be found today in a host of places, such as public libraries, coffee shops, trains, to name just a few? How can a youngster, who lives this true WLAN experience nowadays, imagine a world without it? This book dealswith the design oflinearCMOS RF PowerAmpli?ers(PAs). The RF PA is a very important part of the RF transceiver, the device that enables wireless communications. Two important aspects that are key to keep the advances in RF PA design at an accelerate pace are treated: ef?ciency enhancement and frequen- tunable capability. For this purpose, the design of two different integrated circuits realizedina0. 11 µ mtechn ologyispresented,eachoneaddressingadifferen taspect. With respect to ef?ciency enhancement, the design of a dynamic supply RF power ampli?er is treated, making up the material of Chaps. 2 to 4.

Electrostatics 2003 CRC Press

Understand feedback with this accessible, concise, and informal guide. Perfect for students, especially those who need a refresher, as well as practising engineers.

Dynamic Behavior of Materials, Volume 1 Springer Science & Business Media

This book provides comprehensive coverage of the new wide-bandgap semiconductor gallium oxide (Ga2O3). Ga2O3 has been attracting much attention due to its excellent materials properties. It features an extremely large bandgap of greater than 4.5 eV and availability of large-size, high-quality native substrates produced from melt-grown bulk single crystals. Ga2O3 is thus a rising star among ultra-wide-

bandgap semiconductors and represents a key emerging research field for the worldwide semiconductor community. Expert chapters cover physical properties, synthesis, and state-of-the-art applications, including materials properties, growth techniques of melt-grown bulk single crystals and epitaxial thin films, and many types of devices. The book is an essential resource for academic and industry readers who have an interest in, or plan to start, a new R&D project related to Ga2O3.

Perspectives on Localization Springer

Dielectric barrier discharge (DBD) excimer lamps emit vacuum-UV optical radiation. This work presents novel methods for efficiently operating DBDs with short, high-voltage pulses. Transformer-less systems utilising SiC power semiconductor switches are presented. Pulse frequencies of up to 3.1 MHz and peak inverter efficiencies of 92 % were achieved. The work encloses both mathematical backgrounds of pulsed resonant circuits and practical implementation of low-inductive power stages.