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Devices overview. Discrete signal and systems. Z transforms. The discrete Fourier transform. FIR and IIR filter design methods. Kalman filters. Implementation of digital control algorithms. Review of architectures. Microcontrollers. Systolic arrays. Case studies.

Brain-Computer Interfacing, Volume 168, not

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only gives readers a clear understanding of what BCI science is currently offering, but also describes future expectations for restoring lost brain function in patients. In-depth technological chapters are aimed at those interested in BCI technologies and the nature of brain signals, while more comprehensive summaries are provided in the more applied chapters. Readers will be able to grasp BCI concepts, understand what needs the technologies can meet, and provide an informed opinion on BCI science. Explores how many different causes of disability have similar functional consequences (loss of

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mobility, communication etc.) Addresses how BCI can be of use Presents a multidisciplinary review of BCI technologies and the opportunities they provide for people in need of a new kind of prosthetic Offers a comprehensive, multidisciplinary review of BCI for researchers in neuroscience and traumatic brain injury that is also ideal for clinicians in neurology and neurosurgery In the last 15 years, a recognizable surge in the field of Brain Computer Interface (BCI) research and development has emerged. This emergence has sprung from a variety of factors. For one, inexpensive computer

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hardware and software is now available and can support the complex high-speed analyses of brain activity that is essential is BCI. Another factor is the greater understanding of the central nervous system including the abundance of new information on the nature and functional correlates of brain signals and improved methods for recording these signals in both the short-term and long-term. And the third, and perhaps most significant factor, is the new recognition of the needs and abilities of people disabled by disorders such as cerebral palsy, spinal cord injury, stroke, amyotrophic lateral sclerosis (ALS),

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multiple sclerosis, and muscular dystrophies. The severely disabled are now able to live for many years and even those with severely limited voluntary muscle control can now be given the most basic means of communication and control because of the recent advances in the technology, research, and applications of BCI. This book is intended to provide an introduction to and summary of essentially all major aspects of BCI research and development. Its goal is to be a comprehensive, balanced, and coordinated presentation of the field's key principles, current practice, and future prospects.

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Practical Control of Electric Machines

Advances in Theory and Applications

Practical Data Acquisition for

Instrumentation and Control Systems

Telstar I.

Control and Dynamic Systems V44: Analysis and

Control System Techniques for Electric Power

Systems Part 4 of 4

Brain-Computer Interfaces

This Special Issue focuses on the state-of-the-art results from the definition and design of filters for low- and high frequency applications and systems. Different technologies and solutions are commonly adopted for

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filter definition, from electrical to electromechanical and mechanical solutions, from passive to active devices, and from hybrid to integrated designs. Aspects related to theoretical and experimental research in filter design, CAD modeling and novel technologies and applications, as well as filter fabrication, characterization and testing are covered. The proposed research articles deal with different topics as follows: Modeling, design and simulation of filters; Processes and fabrication technologies for filters; Automated characterization and test of filters; Voltage and current mode filters; Integrated and discrete filters; Passive and active filters; Variable

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filters, characterization and tunability.

From the initial observation of proton magnetic resonance in water and in paraffin, the discipline of nuclear magnetic resonance has seen unparalleled growth as an analytical method. Modern NMR spectroscopy is highly developed, yet still evolving, subject which finds application in chemistry, biology, medicine, materials science and geology. In this book, emphasis is on the more recently developed methods of solution-state NMR applicable to chemical research, which are chosen for their wide applicability and robustness. These have, in many cases, already become established techniques in

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NMR laboratories, in both academic and industrial establishments. A considerable amount of information guidance is given on the implementation and execution of the techniques described in this book.

This three volume set LNAI 9244, 9245, and 9246 constitutes the refereed proceedings of the 8th International Conference on Intelligent Robotics and Applications, ICIRA 2015, held in Portsmouth, UK, in August 2015. The 60 papers included in the first volume are organized in topical sections on analysis and control for complex systems; marine vehicles and oceanic engineering; drives and actuators' modeling;

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biomechatronics in bionic dexterous hand; robot actuators and sensors; intelligent visual systems; estimation and identification; and adaptive control system.

EDN, Electrical Design News

Nuclear Science Abstracts

Energy and Ecological Perspectives

Digital Signal Processing in Power Electronics Control
Circuits

Evaluation Engineering

Cam Design and Manufacturing Handbook

Beginning at an introductory level and

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progressing to more advanced topics, this handbook provides all the information needed to properly design, model, analyze, specify, and manufacture cam-follower systems. It is accompanied by a 90-day trial demonstration copy of the professional version of Dynacam.

The second edition of this highly successful text focuses on the major changes that have taken place in this field in recent times. Data Acquisition

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Techniques Using PCs, Second Edition, recognises that data acquisition is the core of most engineering and many life science systems in measurement and instrumentation. It will prove invaluable to scientists, engineers, students and technicians wishing to keep up with the latest technological developments. Teaches the reader how to set up a PC-based system that measures, analyzes, and controls experiments and processes through detailed design examples

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Geared for beginning and advanced users, with many tutorials for less experienced readers, and detailed standards references for more experienced readers Fully revised new edition discusses latest programming languages and includes a list of over 80 product manufacturers to save valuable time

Testing and Measurement: Techniques and Applications is divided into 6 sections: Microwave, Ultrasonic and

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***Acoustic Measurement and Application;
Material Performance and Measuring and
Testing Technique; Laser, Optics Fiber
and Sensor; Industrial Autoimmunization
and Measurement; Artificial Intelligence
and Application; and Image, Signal and
In***

***Proceedings of the 2015 International
Conference on Testing and Measurement
Techniques (TMTA 2015), 16-17 January
2015, Phuket Island, Thailand
A Multi-purpose Data Acquisition System***

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***for Instrumentation of the Nearshore
Environment***

***Signal Conditioning and PC-based Data
Acquisition Handbook***

NASA Tech Briefs

Data Acquisition Techniques Using PCs

***Proceedings of the AHFE 2020 Virtual
Conferences on Software and Systems
Engineering, and Artificial Intelligence
and Social Computing, July 16-20, 2020,
USA***

Analysis and Control System Techniques for Electric Power

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Systems, Part 4 is the fourth volume of a four volume sequence in this series devoted to the significant theme of "Analysis and Control Techniques for Electric Power Systems." The broad topics involved include transmission line and transformer modeling. Since the issues in these two fields are rather well in hand, although advances continue to be made, this four volume sequence will focus on advances in areas including power flow analysis, economic operation of power systems, generator modeling, power system stability, voltage and power control techniques, and system protection, among others. This book comprises seven chapters, with the first focusing on computer relaying in power systems. Succeeding chapters then discuss advanced control techniques for high performance electric drives; high voltage

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outdoor insulation technology; and power system generation expansion planning using the maximum principle and analytical production cost model. Other chapters cover development of expert systems and their learning capability for power system applications; advances in fast power flow algorithms; and power systems state estimation based on least absolute value (LAV). This book will be of interest to practitioners in the fields of electrical and computer engineering.

This comprehensive handbook is a one-stop engineering reference. Covering data converter fundamentals, techniques, applications, and beginning with the basic theoretical elements necessary for a complete understanding of data converters, this reference covers all the latest advances in the

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field. This text describes in depth the theory behind and the practical design of data conversion circuits as well as describing the different architectures used in A/D and D/A converters. Details are provided on the design of high-speed ADCs, high accuracy DACs and ADCs, and sample-and-hold amplifiers. Also, this reference covers voltage sources and current reference, noise-shaping coding, and sigma-delta converters, and much more. The book's 900-plus pages are packed with design information and application circuits, including guidelines on selecting the most suitable converters for particular applications. You'll find the very latest information on:

- Data converter fundamentals, such as key specifications, noise, sampling, and testing
- Architectures and processes, including SAR, flash, pipelined, folding, and

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more · Practical hardware design techniques for mixed-signal systems, such as driving ADCs, buffering DAC outputs, sampling clocks, layout, interfacing, support circuits, and tools. · Data converter applications dealing with precision measurement, data acquisition, audio, display, DDS, software radio and many more. The accompanying CD-ROM provides software tools for testing and analyzing data converters as well as a searchable pdf version of the text. * Brings together a huge amount of information impossible to locate elsewhere. * Many recent advances in converter technology simply aren't covered in any other book. * A must-have design reference for any electronics design engineer or technician.

The book titled Advanced Computational and Communication Paradigms: Proceedings of International Conference on

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ICACCP 2017, Volume 1 presents refereed high-quality papers of the First International Conference on Advanced Computational and Communication Paradigms (ICACCP 2017) organized by the Department of Computer Science and Engineering, Sikkim Manipal Institute of Technology, held from 8th 10 September 2017. ICACCP 2017 covers an advanced computational paradigms and communications technique which provides failsafe and robust solutions to the emerging problems faced by mankind. Technologists, scientists, industry professionals and research scholars from regional, national and international levels are invited to present their original unpublished work in this conference. There were about 550 technical paper submitted. Finally after peer review, 142 high-quality papers have been accepted and

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registered for oral presentation which held across 09 general sessions and 05 special sessions along with 04 keynote address and 06 invited talks. This volume comprises 65 accepted papers of ICACCP 2017.

Technical Memorandum - U.S. Army Corps of Engineers,
Coastal Engineering Research Center

Model-Based Design and Simulation

The PC Systems Handbook for Scientists and Engineers

Commerce Business Daily

High-Throughput Analysis in the Pharmaceutical Industry

The Shock and Vibration Bulletin

Many digital control circuits in current literature are described using analog transmittance. This may not

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always be acceptable, especially if the sampling frequency and power transistor switching frequencies are close to the band of interest.

Therefore, a digital circuit is considered as a digital controller rather than an analog circuit. This helps to avoid errors and instability in high frequency components. Digital Signal Processing in Power Electronics Control Circuits covers problems concerning the design and realization of digital control algorithms for power electronics circuits using digital signal processing (DSP) methods. This book bridges the gap between power electronics and

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DSP. The following realizations of digital control circuits are considered: digital signal processors, microprocessors, microcontrollers, programmable digital circuits. Discussed in this book is signal processing, starting from analog signal acquisition, through its conversion to digital form, methods of its filtration and separation, and ending with pulse control of output power transistors. The book is focused on two applications for the considered methods of digital signal processing: an active power filter and a digital class D power amplifier. The major benefit to readers is the acquisition of specific

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knowledge concerning discussions on the processing of signals from voltage or current sensors using a digital signal processor and to the signals controlling the output inverter transistors. Included are some Matlab examples for illustration of the considered problems.

"Nuclear Magnetic Resonance (NMR) Spectroscopy remains the foremost analytical technique for the structure elucidation of organic molecules and an indispensable tool for the synthetic, medicinal and natural product chemist. New techniques continue to emerge and the application of NMR methods

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continues to expand. High-Resolution NMR Techniques in Organic Chemistry is designed for use in academic and industrial NMR facilities, as a text for graduate-level NMR courses, and as an accessible reference for the chemist's or spectroscopist's desk." --Book Jacket.

This book addresses emerging issues concerning the integration of artificial intelligence systems in our daily lives. It focuses on the cognitive, visual, social and analytical aspects of computing and intelligent technologies, and highlights ways to improve the acceptance, effectiveness, and efficiency of said

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technologies. Topics such as responsibility, integration and training are discussed throughout. The book also reports on the latest advances in systems engineering, with a focus on societal challenges and next-generation systems and applications for meeting them. Based on the AHFE 2020 Virtual Conference on Software and Systems Engineering, and the AHFE 2020 Virtual Conference on Artificial Intelligence and Social Computing, held on July 16–20, 2020, it provides readers with extensive information on current research and future challenges in these fields, together with practical

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insights into the development of innovative services for various purposes.

Analog-Digital Converters for Industrial Applications
Including an Introduction to Digital-Analog
Converters

Simulation and Evaluation Techniques

Digital Signal Processing

Principles and Practice

Intelligent Robotics and Applications

IC Master

Advanced concepts for wireless communications
offer a vision of technology that is embedded in

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our surroundings and practically invisible, but present whenever required. Although the use of deep submicron CMOS processes allows for an unprecedented degree of scaling in digital circuitry, it complicates the implementation and integration of traditional RF circuits. The requirement for long operating life under limited energy supply also poses severe design constraints, particularly in critical applications in commerce, healthcare, and security. These challenges call for innovative design solutions at the circuit and system levels. Low Power Emerging

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Wireless Technologies addresses the crucial scientific and technological challenges for the realization of fully integrated, highly efficient, and cost-effective solutions for emerging wireless applications. Get Insights from the Experts on Wireless Circuit Design The book features contributions by top international experts in wireless circuit design representing both industry and academia. They explore the state of the art in wireless communication for 3G and 4G cellular networks, millimeter-wave applications, wireless sensor networks, and wireless medical

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technologies. The emphasis is on low-power wireless applications, RF building blocks for wireless applications, and short-distance and beam steering. Topics covered include new opportunities in body area networks, medical implants, satellite communications, automobile radar detection, and wearable electronics. Exploit the Potential behind Emerging Green Wireless Technologies A must for anyone serious about future wireless technologies, this multidisciplinary book discusses the challenges of emerging power-efficient applications. Written for practicing engineers in

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the wireless communication field who have some experience in integrated circuits, it is also a valuable resource for graduate students.

The introduction of combinatorial chemistry technology has increased the amount of compounds generated in a year from 50 to 2000. Conventional analytical approaches simply cannot keep up. These circumstances have caused drug discovery to take on the shape of a bottleneck, like traffic through a toll booth. In order to break the bottleneck, a corres

International Conference on Engineering

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Education and Research

Testing and Measurement: Techniques and
Applications

iCEER2014-McMaster Digest

Proceedings of the AHFE 2020 Virtual Conference
on Human Factors and Ergonomics in Healthcare
and Medical Devices, July 16-20, 2020, USA

Advances in Artificial Intelligence, Software and
Systems Engineering

Principles, Devices and Applications

Data Conversion Handbook

This book presents deep analysis of machine control for

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different applications, focusing on its implementation in embedded systems. Necessary peripherals for various microcontroller families are analysed for machine control and software architecture patterns for high-quality software development processes in motor control units are described. Abundant figures help the reader to understand the theoretical, simulation and practical implementation stages of machine control. Model-based design, used as a mathematical and visual approach to construction of complex control algorithms, code generation that eliminates hand-coding errors, and co-simulation tools such as Simulink, PSIM and finite element analysis are discussed. The simulation and verification tools refine, and retest the models without having to resort to prototype construction. The book shows how a

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voltage source inverter can be designed with tricks, protection elements, and space vector modulation. Practical Control of Electric Machines: Model-Based Design and Simulation is based on the author's experience of a wide variety of systems in domestic, automotive and industrial environments, and most examples have implemented and verified controls. The text is ideal for readers looking for an insight into how electric machines play an important role in most real-life applications of control. Practitioners and students preparing for a career in control design applied in electric machines will benefit from the book's easily understood theoretical approach to complex machine control. The book contains mathematics appropriate to various levels of experience, from the student to the academic and the experienced professional. Advances in

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Industrial Control reports and encourages the transfer of technology in control engineering. The rapid development of control technology has an impact on all areas of the control discipline. The series offers an opportunity for researchers to present an extended exposition of new work in all aspects of industrial control.

Introduction to Data Acquisition & Control; Analog and Digital Signals; Signal Conditioning; The Personal Computer for Real Time Work; Plug-in Data Acquisition Boards; Serial Data Communications; Distributed & Standalone Loggers/Controllers; IEEE 488 Standard; Ethernet & LAN Systems; The Universal Serial Bus (USB); Specific Techniques; The PCMCIA Card; Appendix A: Glossary; Appendix B: IBM PC Bus Specifications; Appendix C: Review

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of the Intel 8255 PPI Chip; Appendix D: Review of the Intel 8254 Timer-Counter Chip; Appendix E: Thermocouple Tables; Appendix F: Numbers Systems; Appendix G: GPIB (IEEE-488) Mnemonics & their Definition; Appendix H: Practical Laboratories & Demonstrations; Appendix I: Command Structure & Programming.

This monograph presents a reliable methodology for characterising the energy and eco-efficiency of unit manufacturing processes. The Specific Energy Consumption, SEC, will be identified as the key indicator for the energy efficiency of unit processes. An empirical approach will be validated on different machine tools and manufacturing processes to depict the relationship between process parameters and energy consumptions. Statistical results and

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additional validation runs will corroborate the high level of accuracy in predicting the energy consumption. In relation to the eco-efficiency, the value and the associated environmental impacts of manufacturing processes will also be discussed. The interrelationship between process parameters, process value and the associated environmental impact will be integrated in the evaluation of eco-efficiency. The book concludes with a further investigation of the results in order to develop strategies for further efficiency improvement. The target audience primarily comprises researchers and experts in the field, but the book may also be beneficial for graduate students.

Advanced Computational and Communication Paradigms
Filter Design Solutions for RF systems

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MIMI '85 [i.e. '84], Las Vegas

High-resolution NMR Techniques in Organic Chemistry

Advances in Human Factors and Ergonomics in Healthcare
and Medical Devices

This book offers students and those new to the topic of analog-to-digital converters (ADCs) a broad introduction, before going into details of the state-of-the-art design techniques for SAR and DS converters, including the latest research topics, which are valuable for IC design engineers as well as users of ADCs in applications. The book then addresses important topics, such as correct

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connectivity of ADCs in an application, the verification, characterization and testing of ADCs that ensure high-quality end products. Analog-to-digital converters are the central element in any data processing system and regulation loops such as modems or electrical motor drives. They significantly affect the performance and resolution of a system or end product. System development engineers need to be familiar with the performance parameters of the converters and understand the advantages and disadvantages of the various architectures. Integrated circuit development engineers have to

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overcome the problem of achieving high performance and resolution with the lowest possible power dissipation, while the digital circuitry generates distortion in supply, ground and substrate. This book explains the connections and gives suggestions for obtaining the highest possible resolution. Novel trends are illustrated in the design of analog-to-digital converters based on successive approximation and the difficulties in the development of continuous-time delta-sigma modulators are also discussed.

"Covers all areas of computer-based data

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acquisition--from basic concepts to the most recent technical developments--without the burden of long theoretical derivations and proofs. Offers practical, solution-oriented design examples and real-life case studies in each chapter and furnishes valuable selection guides for specific types of hardware."

Meant for students and practicing Engineers, this book provides an integrated exposure to dimensional and mechanical measurement. It gives the reader a methodical and well thought-out presentation using concise explanations, flexible approach and real-life case studies from

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the industry.

Low Power Emerging Wireless Technologies

Efficiency of Manufacturing Processes

Most Comprehensive Guide for Apple II and I. B.

M. Personal Computers

Data Acquisition and Process Control Using

Personal Computers

5G Wireless Systems

8th International Conference, ICIRA 2015,

Portsmouth, UK, August 24-27, 2015,

Proceedings, Part I

*This book focuses on key simulation and
evaluation technologies for 5G systems. Based*

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on the most recent research results from academia and industry, it describes the evaluation methodologies in depth for network and physical layer technologies. The evaluation methods are discussed in depth. It also covers the analysis of the 5G candidate technologies and the testing challenges, the evolution of the testing technologies, fading channel measurement and modeling, software simulations, software hardware cosimulation, field testing and other novel evaluation methods. The fifth-generation (5G) mobile communications system targets highly improved network performances in terms of the network

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capacity and the number of connections. Testing and evaluation technologies is widely recognized and plays important roles in the wireless technology developments, along with the research on basic theory and key technologies. The investigation and developments on the multi-level and comprehensive evaluations for 5G new technologies, provides important performance references for the 5G technology filtering and future standardizations. Students focused on telecommunications, electronic engineering, computer science or other related disciplines will find this book

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useful as a secondary text. Researchers and professionals working within these related fields will also find this book useful as a reference.

This book explores how human factors and ergonomic principles are currently transforming healthcare. It reports on the design of systems and devices used to improve the quality, safety, efficiency and effectiveness of patient care, and discusses findings on improving organizational outcomes in the healthcare setting, as well as approaches to analyzing and modeling those work aspects that are unique to healthcare.

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Based on papers presented at the AHFE 2020 Virtual Conference on Human Factors and Ergonomics in Healthcare and Medical Devices, held on July 16-20, 2020, the book highlights the physical, cognitive and organizational aspects of human factors and ergonomic applications, and shares various perspectives, including those of clinicians, patients, health organizations and insurance providers. Given its scope, the book offers a timely reference guide for researchers involved in the design of medical systems and healthcare professionals managing healthcare settings, as well as healthcare counselors

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*and international health organizations.
Expanding and Networking Microcomputers
Mini and Microcomputers in Control, Filtering
and Signal Processing
Proceedings of International Conference on
ICACCP 2017, Volume 1
METROLOGY & MEASUREMENT*