

<<完整的数字设计(影印版) (平装)>>

图书基本信息

书名：<<完整的数字设计(影印版) (平装)>>

13位ISBN编号：9787302077312

10位ISBN编号：7302077312

出版时间：2004-1

出版时间：清华大学出版社

作者：鲍尔奇

页数：460

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<完整的数字设计(影印版) (平装)>>

内容概要

现代高性能通信和嵌入式系统的蓬勃发展对于电子工程师和大学学生的数字电路硬件设计技术提出了新的挑战和要求。

为了使所设计的数字系统能成功地工作，设计人员不仅需要具备系统原理方面的基础知识，而且也需要在具体实现数字设计的专门知识方面有一个全面的理解和指导。

本书作者Mark Balch是在美国硅谷长期从事高性能计算机网络硬件设计并积极参与工业标准制定的资深工程师，有丰富的实际工作经验和对数字设计的深刻理解。

作者在这些成功经验及对数字系统设计与实现深刻理解基础上所著的这本书能帮助读者理解和探索数字系统的整体结构、定义数字系统的全定制设计要求、研究模块和元件相互间的密切联系、评估现有的设计部件和技术并帮助解决具体的设计问题，其中包括以微处理器为基础的数字系统设计、支持数字系统的模拟电路原理以及如何用基本的设计元件和最新的设计技术实现一个完整的数字系统。

本书内容丰富、覆盖面广。

正如书名本身表明的那样，这是一本名副其实内容完整的数字系统设计教科书，也是一本任何时候都应用方便的电子设计实用参考书。

书籍目录

Preface xiii Acknowledgments xix PART 1 Digital Fundamentals Chapter 1 Digital Logic 1.1 Boolean Logic / 3 1.2 Boolean Manipulation / 7 1.3 The Karnaugh map / 8 1.4 Binary and Hexadecimal Numbering / 10 1.5 Binary Addition / 14 1.6 Subtraction and Negative Numbers / 15 1.7 Multiplication and Division / 17 1.8 Flip-Flops and Latches / 18 1.9 Synchronous Logic / 21 1.10 Synchronous Timing Analysis / 23 1.11 Clock Skew / 25 1.12 Clock Jitter / 27 1.13 Derived Logical Building Blocks / 28 Chapter 2 Integrated Circuits and the 7400 Logic Families 2.1 The Integrated Circuit / 33 2.2 IC Packaging / 38 2.3 The 7400-Series Discrete Logic Family / 41 2.4 Applying the 7400 Family to Logic Design / 43 2.5 Synchronous Logic Design with the 7400 Family / 45 2.6 Common Variants of the 7400 Family / 50 2.7 Interpreting a Digital IC Data Sheet / 51 Chapter 3 Basic Computer Architecture 3.1 The Digital Computer / 56 3.2 Microprocessor Internals / 58 3.3 Subroutines and the Stack / 60 3.4 Reset and Interrupts / 62 3.5 Implementation of an Eight-Bit Computer / 63 3.6 Address Banking / 67 3.7 Direct Memory Access / 68 3.8 Extending the Microprocessor Bus / 70 3.9 Assembly Language and Addressing Modes / 72 Chapter 4 Memory 4.1 Memory Classifications / 77 4.2 EPROM / 79 4.3 Flash Memory / 81 4.4 EEPROM / 85 4.5 Asynchronous SRAM / 86 4.6 Asynchronous DRAM / 88 4.7 Multiport Memory / 92 4.8 The FIFO / 94 Chapter 5 Serial Communications 5.1 Serial vs. Parallel Communication / 98 5.2 The UART / 99 5.3 ASCII Data Representation / 102 5.4 RS-232 / 102 5.5 RS-422 / 107 5.6 Modems and Baud Rate / 108 5.7 Network Topologies / 109 5.8 Network Data Formats / 110 5.9 RS-485 / 112 5.10 A Simple RS-485 Network / 114 5.11 Interchip Serial Communications / 117 Chapter 6 Instructive Microprocessors and Microcomputer Elements 6.1 Evolution / 121 6.2 Motorola 6800 Eight-bit Microprocessor Family / 122 6.3 Intel 8051 Microcontroller Family / 125 6.4 Microchip PIC Microcontroller Family / 131 6.5 Intel 8086 16-Bit Microprocessor Family / 134 6.6 Motorola 68000 16/32-Bit Microprocessor Family / 139 PART 2 Advanced Digital Systems Chapter 7 Advanced Microprocessor Concepts 7.1 RISC and CISC / 145 7.2 Cache Structures / 149 7.3 Caches in Practice / 154 7.4 Virtual Memory and the MMU / 158 7.5 Superscalar and Superscalar Architectures / 161 7.6 Floating-Point Arithmetic / 165 7.7 Digital Signal Processors / 167 7.8 Performance Metrics / 169 Chapter 8 High-Performance Memory Technologies 8.1 Synchronous DRAM / 173 8.2 Double Data Rate SDRAM / 179 8.3 Synchronous SRAM / 182 8.4 DDR and QDR SRAM / 185 8.5 Content Addressable Memory / 188 Chapter 9 Networking 9.1 Protocol Layers One and Two / 193 9.2 Protocol Layers Three and Four / 194 9.3 Physical Media / 197 9.4 Channel Coding / 198 9.5 8B10B Coding / 203 9.6 Error Detection / 207 9.7 Checksum / 208 9.8 Cyclic Redundancy Check / 209 9.9 Ethernet / 215 Chapter 10 Logic Design and Finite State Machines 10.1 Hardware Description Languages / 221 10.2 CPU Support Logic / 227 10.3 Clock Domain Crossing / 233 10.4 Finite State Machines / 237 10.5 FSM Bus Control / 239 10.6 FSM Optimization / 243 10.7 Pipelining / 245 Chapter 11 Programmable Logic Devices 11.1 Custom and Programmable Logic / 249 11.2 GALs and PALs / 252 11.3 CPLDs / 255 11.4 FPGAs / 257 PART 3 Analog Basics for Digital Systems Chapter 12 Electrical Fundamentals 12.1 Basic Circuits / 267 12.2 Loop and Node Analysis / 268 12.3 Resistance Combination / 271 12.4 Capacitors / 272 12.5 Capacitors as AC Elements / 274 12.6 Inductors / 276 12.7 Nonideal RLC Models / 276 12.8 Frequency Domain Analysis / 279 12.9 Lowpass and Highpass Filters / 283 12.10 Transformers / 288 Chapter 13 Diodes and Transistors 13.1 Diodes / 293 13.2 Power Circuits with Diodes / 296 13.3 Diodes in Digital Applications / 298 13.4 Bipolar Junction Transistors / 300 13.5 Digital Amplification with the BJT / 301 13.6 Logic Functions with the BJT / 304 13.7 Field-Effect Transistors / 306 13.8 Power FETs and JFETs / 309 Chapter 14 Operational Amplifiers 14.1 The Ideal Op-amp / 311 14.2 Characteristics of Real Op-amps / 316 14.3 Bandwidth Limitations / 324 14.4 Input Resistance / 325 14.5 Summation Amplifier Circuits / 328 14.6 Active Filters / 331 14.7 Comparators and Hysteresis / 333 Chapter 15 Analog Interfaces for Digital Systems 15.1 Conversion between Analog and Digital Domains / 339 15.2 Sampling Rate and Aliasing / 341 15.3 ADC Circuits / 345 15.4 DAC Circuits / 348 15.5 Filters in Data Conversion Systems / 350 PART 4 Digital System Design in Practice Chapter 16 Clock Distribution 16.1 Crystal Oscillators and Ceramic Resonators / 355 16.2 Low-Skew Clock Buffers / 357 16.3 Zero-Delay Buffers: The PLL / 360 16.4

<<完整的数字设计(影印版) (平装)>>

Frequency Synthesis / 364 16.5 Delay-Locked Loops / 366 16.6 Source-Synchronous Clocking / 367 Chapter 17
Voltage Regulation and Power Distribution 17.1 Voltage Regulation Basics / 372 17.2 Thermal Analysis / 374 17.3
Zener Diodes and Shunt Regulators / 376 17.4 Transistors and Discrete Series Regulators / 379 17.5 Linear
Regulators / 382 17.6 Switching Regulators / 386 17.7 Power Distribution / 389 17.8 Electrical Integrity / 392
Chapter 18 Signal Integrity 18.1 Transmission Lines / 398 18.2 Termination / 403 18.3 Crosstalk / 408 18.4
Electromagnetic Interference / 410 18.5 Grounding and Electromagnetic Compatibility / 413 18.6 Electrostatic
Discharge / 415 Chapter 19 Designing for Success 19.1 Practical Technologies / 420 19.2 Printed Circuit Boards /
422 19.3 Manually Wired Circuits / 425 19.4 Microprocessor Reset / 428 19.5 Design for Debug / 429 19.6
Boundary Scan / 431 19.7 Diagnostic Software / 433 19.8 Schematic Capture and Spice / 436 19.9 Test Equipment
/ 440 Appendix A Further Education Index 445

<<完整的数字设计(影印版) (平装)>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>