Microprocessor-Based Systems: Hardware and Interfacing  p. 1
Microprocessors, Microcomputers, and Assembly Language  p. 3
Microprocessors  p. 4
Microprocessor Instruction Set and Computer Languages  p. 13
From Large Computers to Single Chip Microcontrollers  p. 20
Application: Microprocessor-Controlled Temperature System (MCTS)  p. 24
Introduction to 8085 Assembly Language Programming  p. 31
The 8085 Programming Model  p. 32
Instruction Classification  p. 34
Instruction, Data Format, and Storage  p. 37
How to Write, Assemble, and Execute a Simple Program  p. 42
Overview of the 8085 Instruction Set  p. 46
Writing and Hand Assembling a Program  p. 50
Microprocessor Architecture and Microcomputer Systems  p. 57
Microprocessor Architecture and Its Operations  p. 58
Memory  p. 63
Input and Output (I/O) Devices  p. 80
Example of a Microcomputer System  p. 81
Review: Logic Devices for Interfacing  p. 83
Microprocessor-Based System Application: MCTS  p. 90
8085 Microprocessor Architecture and Memory Interfacing  p. 95
The 8085 MPU  p. 96
Example of an 8085-Based Microcomputer  p. 109
Memory Interfacing  p. 116
Interfacing the 8155 Memory Segment  p. 123
Illustrative Example: Designing Memory for the MCTS Project  p. 126
Testing and Troubleshooting Memory Interfacing Circuits  p. 129
How Does an 8085-Based Single-Board Microcomputer Work?  p. 132
Interfacing I/O Devices  p. 139
Basic Interfacing Concepts  p. 140
Interfacing Output Displays  p. 150
Interfacing Input Devices  p. 155
Memory-Mapped I/O  p. 157
Testing and Troubleshooting I/O Interfacing Circuits  p. 163
Some Questions and Answers  p. 164
Programming the 8085  p. 173
Introduction to 8085 Instructions  p. 175
Data Transfer (Copy) Operations  p. 176
Arithmetic Operations  p. 86
Logic Operations  p. 96
8085 Vectored Interrupts p. 385
Restart as Software Instructions p. 393
Additional I/O Concepts and Processes p. 395
Interfacing Data Converters p. 403
Digital-to-Analog (D/A) Converters p. 404
Analog-to-Digital (A/D) Converters p. 414
Programmable Interface Devices: 8155 I/O and Timer; 8279 Keyboard/Display Interface p. 425
Basic Concepts in Programmable Devices p. 426
The 8155: Multipurpose Programmable Device p. 432
The 8279 Programmable Keyboard/Display Interface p. 450
General-Purpose Programmable Peripheral Devices p. 459
The 8255A Programmable Peripheral Interface p. 460
Illustration: Interfacing Keyboard and Seven-Segment Display p. 479
Illustration: Bidirectional Data Transfer Between Two Microcomputers p. 488
The 8254 (8253) Programmable Interval Timer p. 494
The 8259A Programmable Interrupt Controller p. 505
Direct Memory Access (DMA) and the 8237 DMA Controller p. 514
Serial I/O and Data Communication p. 523
Basic Concepts in Serial I/O p. 524
Software-Controlled Asynchronous Serial I/O p. 534
The 8085--Serial I/O Lines: SOD and SID p. 537
Hardware-Controlled Serial I/O Using Programmable Chips p. 540
Microprocessor Applications p. 563
Interfacing Scanned Multiplexed Displays and Liquid Crystal Displays p. 564
Interfacing a Matrix Keyboard p. 573
Memory Design p. 581
MPU Design p. 589
Designing a System: Single-Board Microcomputer p. 592
Software Design p. 597
Development and Troubleshooting Tools p. 603
Extending 8-Bit Microprocessor Concepts to Higher-Level Processors and Microcontrollers p. 607
8-Bit Microprocessors Contemporary to the 8085 p. 608
Review of Microprocessor Concepts p. 611
16-Bit Microprocessors p. 612
High-End-High-Performance Processors p. 626
Single-Chip Microcontrollers p. 633
Number Systems p. 637
Introduction to the EMAC Primer p. 645
Pin Configuration of Selected Logic and Display Devices p. 659
Specifications: Data Converters and Peripheral Devices p. 669
American Standard Code for Information Interchange: ASCII Codes p. 735
8085 Instruction Set p. 737
Solutions to Selected Questions, Problems, and Programming Assignments p. 785
Introduction to 8085 Assemblers and Simulators p. 801
Index p. 815

*Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.*