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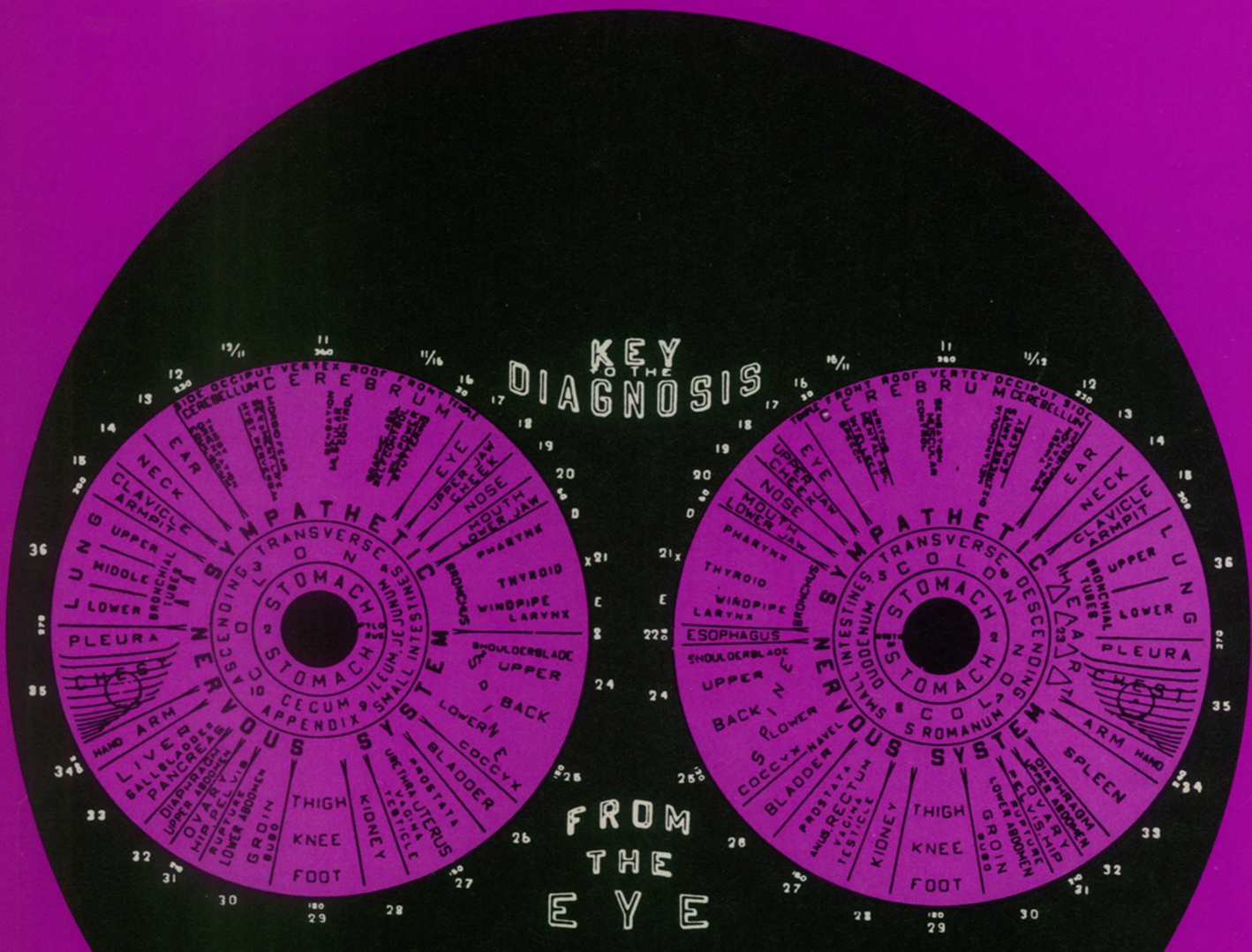

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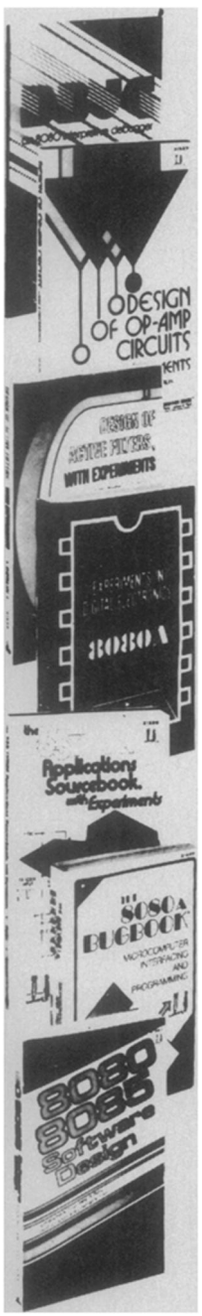

MICROCOMPUTERS

Z-80 Microprocessor Programming and Interfacing, book 1; Nichols, Nichols, and Rony. Without prerequisites, newcomers, hobbyists, professionals and other Z-80 computer users can learn machine code and assembly language programming of the Z-80 integrated circuit, the chip with the most powerful instruction set of all of the 8-bit microcomputers. It is compatible with the 8-bit 8080 and the new 16-bit Z-8000 chips. Skills are developed in examples and experiments by examining the instructions in logically grouped sets. Flowcharts and diagrams illustrate the use of the instructions as they actually operate in programs. The appendixes include a summary of the Z-80 operation codes and execution times and for easy reference, the instructions are sorted also by both mnemonics and op codes. Book 2 (due 9/79) covers interfacing digital circuits with the Z-80 CPU, PIO, CTC, DMA, and SIO chips. **No. 21609** (Book 1) 302p **$10.95**

8080/8085 Software Design - Book 1; Titus, Rony, Larsen, and Titus . A detailed examination of all 244 instructions and typical assembly language programs for the 8080 and 8085 microprocessors. Book 1 assumes some familiarity with numbering systems and digital electronics (covered in books 21542, 21543 and 21550, 21551). It covers mathematical manipulations, number-base conversions, subroutines, advanced instructions, and interfacing of external devices. Detailed examples lead the reader through the *design* of optimum solutions for problems using an easily understood format. Many useful subroutines are provided among the 190 executable programs actually developed and listed. Helpful hardware schematics included. A comprehensive software library and reference. **No. 21541** (Book 1) 334p **$9.50**

Microcomputer - Analog Converter Software & Hardware Interfacing Titus, Titus, Larsen, Rony. Explains and develops detailed programs for interfacing analog electronic devices to digital computers using commercially available A/D and D/A converters. Applicable to all 8080-type microcomputers (8085, Z-80, etc.) Discusses sample-and-hold and multiplexer circuits. Part requirements are given for the reader experiments described. Assumes some familiarity with signal conditioning (two references given); latches, three-state buffer, and device address decoding (covered in Book No. 21447); the 8080 internal registers and I/O operations (see Book Nos. 21447, 21550, 21551) and some experience in programming at the assembly language level (Book Nos. 21447, 21541). A necessary book for anyone interested in measuring or controlling analog signals with small computers. **No. 21540** 288p **$9.50**

Interfacing and Scientific Data Communications Experiments Rony, Larsen, Titus and Titus. Describes the use of UAR/T and USAR/T "chips" for serial data communications between instruments and computers. The operation of teletypewriter interfaces and serial transmission circuits are explored. With experiments and circuit details. 160p **No. 21546 $5.95**

The 8080A Bugbook®: Microcomputer Interfacing and Programming Rony, Larsen and Titus. The principles, concepts, and applications of an 8-bit microcomputer based on the 8080 microprocessor IC chip. The emphasis is on the computer as a controller. Covers the four fundamental tasks of computer interfacing: (1) generation of device select pulses; (2) latching of output data; (3) acquisition of input data; (4) servicing of interrupt signals. Intended to help develop the skills needed to use an 8080-based breadboard microcomputer system. 416p **No. 21447 $10.50**

DBUG: An 8080 Interpretive Debugger Titus and Titus. This text describes DBUG, a software debugging package for 8080-based micro computers. It describes operation of the program and how it can be applied to program development and testing. Complete with documented hexadecimal and octal listings. 112p. **No. 21536 $4.95**

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