

# PRINTOUT

JOSEPH B. SIDOWSKI  
*University of South Florida*

## PRODUCTS

### Digital Stopwatch

Alpha Electronics markets a digital stopwatch kit for \$69.95. The Rally IV has a six-digit LED display, 1/100 sec to 1 h. The watch has four functions: standard, split, rally, and sequential for single, multileg, or interrupted events. The unit also has 24-h timekeeping capability.

Alpha Electronics  
Dept. 1  
P. O. Box 1005  
Merritt Island, FL 32952

### Graphics for NOVA minis

The Lexidata 200 (single PC card) generates a mixed display containing both graphic images and alphanumeric characters. Display is formed from a 256 x 240 dot matrix and is compatible with standard video monitors. Driver software is available for Data General's SOS, RTOS, and RDOS operating systems. The software is FORTRAN callable and provides character generation, vector generation, graphic display, and selective erase of any part of the display. Price: \$2,595 and up.

Lexidata Corp.  
807 Massachusetts Ave.  
Lexington, MA 02173

### Digital Recorder

The Model 8410 is a buffered digital cassette recorder providing storage for 145,000 characters per cassette. It has switch selectable 110/300/1200/ and 2,400 baud speeds and allows remote control. A MOS buffer permits remote interrupt and character editing. Price: approximately \$800.

Techtran Industries  
580 Jefferson Rd.  
Rochester, N. Y. 14623

### Floppy Disk Operating System

A floppy disk operating system for the IMP-16 Microprocessor Development Systems eliminates paper tape, cards, and other source media. Source programs are written and edited at the system keyboard, then stored directly on floppy disk, using the Source Editor. The source program may then be assembled under operating system control, with a single command. National's DOS will run on any IMP-16P or 16L development

system with 8k or more words of memory. A dual-drive floppy disk provides over 5M bits of storage for system software and application programs. Price: \$5,500, includes dual-drive floppy disk, documentation, software, and interface.

National Semiconductor Corp.  
2900 Semiconductor Dr.  
Santa Clara, CA 95051

### Graphics

Two graphic video generators are available on single PC cards, TV refresh from 4k RAMS (256 x 256 dot matrix), color/gray scale using multiple cards. The 4411 model is for the DEC 11 series (\$2,750); the 4416 is for the HP-2100 (\$2,500).

Intermedia Systems  
20430 Town Center Lane  
Cupertino, CA 95014

### Microcomputer

The MICROPAC 80 microcomputer uses an INTEL 8080 microprocessor and has an 8-bit parallel cpu with 78 instructions, direct access to 64k bytes of memory, subroutine nesting, multiple interrupt capability.

PCS Inc.  
5467 Hill 23 Dr.  
Flint, Mich. 48507

### Computer on Chip

Single-chip, 4-bit microcomputers have been introduced by Texas Instruments as the TMS 1000 series. Earlier LSI microprocessors relied on external memory and peripheral circuitry. This new IC packs these extras and the processor on the same chip. The PMOS circuit combines 8,192 bits of ROM and 256 bits of RAM along with a 4-bit arithmetic logic unit and I/O control.

In addition, the chip has an output programmable logic array to simplify interfacing and an internal clock. It operates from a single 15-V supply.

### Voice Response System

EVA is a voice response system with entire words stored in ROM. The synthesized voice is natural-sounding. Each word can be called up in the sequence required for a given message. The unit can be expanded from 10 to 30 words. EVA accepts either binary address

or 10 mutually exclusive switch closures for the first 10 numeric words. Additional words require binary address only.

Master Specialties Co.  
1640 Monrovia  
Costa Mesa, CA 92627

#### Video Screen Splitter

The Model SS-221 allows multiple video images to be simultaneously displayed on a single monitor in horizontal split, vertical split, or corner-insert modes. Signal sources may include composite video from video cameras, VTRs, or off the air TV broadcast signals. The system eliminates the external drive requirement for one camera so multiconductor cable expense is reduced. Video bandwidth of 5 MHz, crosstalk of less than 45 dB at 3 MHz, and fast switching speed of 200 nsec permit a large number of images to be displayed on the same monitor by cascading several SS-221s. Price: \$289.

Thalner Electronic Laboratory  
7235 Jackson Rd.  
Ann Arbor, Mich. 48103

#### Power Modules

The Model 1.5.1000 Logic Power Module directly replaces Analog Devices 905, Philbrick 2213, and Burr Brown 562 at a cost of \$38.80. The Model 2.15.100 Dual Power Module costs \$34.40 and replaces the Analog Devices 902, Burr Brown 552, and Philbrick 505.

Boston Technical Inc.  
Box 262  
Chestnut Hill, MA 02167

#### Mini Time-Delay Relays

The 800 series miniature time delay relays provide adjustable delays from 20 msec to 5 min. The units are housed in DIP-like packages that measure .8 x .4 x .35 in. Three versions are available. The RL800 relays provide delays-on-operate, the RL 810 units a timed-on period, and the RC 850 a flasher function. All are available with fixed or adjustable time periods, and the fixed timers come with delays of 20 msec, 500 msec, 1 sec, 30 sec, 1 min, and 5 min. Adjustable units are available in several ranges.

Timers Unlimited  
25572 Avenue Stanford  
Valencia, CA 91355

#### Solenoids

A new line of box-frame solenoids with quick-disconnect terminations is available with coil ratings of 6, 12, 24, and 120 V dc in three duty cycle classes,

with or without an attached SPDT switch. Pull types are standard. Special voltages and duty cycles are also available.

Magnetic Corp.  
96 Granby St.  
Bloomfield, CT 06002

#### Microcomputer Tape Reader

The INTEL imn 4-90 is a paper tape reader for micro-computer development systems. The reader transfers data asynchronously at 200 char/sec. Price: \$975.

Intel Corp.  
3065 Bowers Ave.  
Santa Clara, CA 95051

#### Slide Sync Cassette Recorder

The Telex recorder provides instant single-button review of important points (audio/visual) without losing synchronization of slide and sound. It can also remote focus a projector and program start and stop signals.

Telex Communications, Inc.  
9600 Aldrich Ave., South  
Minneapolis, MN 55420

#### Fetal Monitoring

The Brattle fetal monitor obtains beat-to-beat heart rate noninvasively via placement of two electrodes on the mother's abdomen. Both fetal heart rate and uterine activity are recorded on a trend recorder that may be switched to faster speed for recording both fetal and maternal ECG. Fetal heart rate is also displayed digitally.

B-D Electrodyne  
Division of Becton Dickinson Co.  
Sharon, MA 02067

## BRIEFS

#### Talking Digital Voltmeter

The Digital Equipment Number Announcer (DENA) is a solid state talking voltmeter. Whole words are digitized and stored in read-only memories. Standard model has numeric words zero to nine but additional words can be added. The device was developed by Masters Specialties Co.

#### Personal Fitness Monitor

The Law Enforcement Assistance Administration is seeking sources with capabilities to design and package a wrist-worn personal fitness monitor for use by law enforcement personnel whose work involves hazardous conditions or periods of physical stress. General requirements include: read-out of blood pressure, read-out of

pulse rate on demand, measure body temperature, read-out time in 24-h sequence, stopwatch, and audible alarm.

#### Point Plotter Module for CRT Displays

Data Translation, Inc. recently announced the DT212 point plotter, the first standardized modular function for generating images on CRT screens. The module allows minicomputers and microprocessors to read-out digital information onto CRT displays and analog recorders. The module is \$245 in large quantities.

#### Blood Flow

A noninvasive technique for monitoring cerebral blood flow is undergoing investigation. The technique is based on a NASA instrument for measuring blood flow on pilots undergoing centrifuge testing. Preliminary clinical studies indicate the device is capable of detecting the carotid artery pulse and measuring the blood flow through the artery to the brain. The transducer utilizes an ultrasonic blood flowmeter.

#### Talking Calculator

A pocket-sized six-function calculator with synthetic speech read-out is being readied for 1976 production by Telesensory Systems of Palo Alto, California. The calculator has a 24-word vocabulary synthesized in a simple LSI chip. All number and function keys as well as final read-out are sounded, as well as operating conditions such as overflow or battery low.

#### Miniature-Size Noise Level Meter

A noise level meter slightly larger than a package of cigarettes is available from B. V. Diode, Utrecht, The Netherlands. Ranges are 40 to 120 dB and 80 to 120 dB for two models. Powered by a 9-V battery, each of the meters has a measuring precision at 1 kHz of  $\pm 1$  dB and reading precision of  $\pm 1.5$  dB on its ranges.

#### Sweep Generators

Sweep generators are manufactured by the companies listed below.

Ailtech Cutler Hammer Co., 815 Broadhollow Rd., Farmingdale, NY 11735

Clarke-Hess Communication Research Corp., 43 W. 16th St., New York, NY 10011

Dana Exact Electronics, Inc., 455 S.E. Second Ave., Hillsboro, OR 97123

Hewlett-Packard, 1501 Page Mill Rd., Palo Alto, CA 94304

Interstate Electronics Corp., 707 E. Vermont Ave., P.O. Box 3117, Anaheim, CA 92803

Kay Elemetrics Corp., 12 Maple Ave., Pine Brook, NJ 07058

Marconi Instruments, 100 Stonehurst Ct., Northvale, NJ 07647

Micro-Now Instrument Co., Inc., 6104 N. Pulaski Rd., Chicago, IL 60646

Micro-Tel Corp., 6310 Blair Hill Ln., Baltimore, MD 21209

Narda Microwave Corp., Plainview, L.I., NY 11803

Philips Test & Measuring Instruments, Inc., 400 Crossways Park Dr., Woodbury, NY 11797

Rohde & Schwarz, 14 Gloria Ln., Fairfield, NJ 07006

Singer Instrumentation, 5340 Alla Rd., Los Angeles, CA 90066

Systron-Donner, 735 Palomar Ave., Sunnyvale, CA 94086

Telonic Industries, 21282 Laguna Canyon Rd., Laguna Beach, CA 92652

Texscan Corp., 2446 N. Shadeland Ave., Indianapolis, IN 46219

Vibration Instruments Co., 1614 Orangethorpe Way, Anaheim, CA 92801

Wavetek Indiana, Inc., 66 N. First Ave., Beech Grove, IN 46107

Weinschel Engineering, 1 Weinschel Ln., Gaithersburg, MD 20760

Wiltron Co., 930 E. Meadow Dr., Palo Alto, CA 94303