PRINTOUT

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PRODUCTS

Color Terminal

The Intecolor 8001 is an eight color intelligent CRT terminal with the following characteristics: 8,080 cpu, 25 line x 80 char/line, 4K x 8 RAM, PROM software, and sockets for 64 special graphics. Price: \$2,495 in single quantities.

Intelligent Systems Corp.
4376 Ridgedate Dr.
Duluth, GA 30136

Disk Storage

The PM/DS disk system is software-, hardware-, and media-compatible with the DEC, Data General, and Interdata family of minicomputers. It consists of a disk controller (PM/DC) and a dual disk drive (PM/DD), either of which may be purchased separately. The PM/DC will accommodate disk drives made by numerous manufacturers, including Diablo, Wangco, Pertec, Caelus, and Iomec. The PM/DD contains 5 megabytes of storage, 2.5 fixed and 2.5 removable, and may be daisy chained in an existing disk system.

Plessey Microsystems, Inc.
1674 McGaw Ave.
Santa Ana, CA 92705

Psychoacoustics

Coulbourn Instruments is distributing a new supplement to their *Applications Manual for Psychoacoustics*. It features applications using the Coulbourn modular instrument system in standard and high-frequency designs (up to 50 kHz) and digitally programmable parametrics. Digital (8-bit binary) control of frequency, linear and decibel amplitude, modulation ratio, envelope slope, and frequency sweep rate are shown in detailed hook-up diagrams. The system is compatible with, and can be used to retrofit, Grason-Stadler systems with the purchase of a \$15 power supply cable.

Coulbourn Instruments, Inc.
Box 2551
Lehigh Valley, PA 18001

EMG Biofeedback

The EDC-22 EMG biofeedback monitor kit is portable and uses several control functions with both visual

and audio modes. The unit has 2-microV sensitivity, 80-dB CM rejection, and noise less than 1 microV. The kit is priced at \$65. The assembled unit is \$109.

Extended Digital Concepts
P. O. Box 9161
Berkeley, CA 94709

Stimulator

The Model 601 bipolar stimulator is a complete stimulator/isolator with control of frequency, pulse duration, and output current. The instrument, when driven by the Series 300 or 800 stimulators or any external pulse source of between +3 and +6 V, operates as a bipolar stimulus isolator. Output current is constant (load independent) to 5 mA with a voltage compliance exceeding 90 V.

W-P Instruments, Inc.
60 Fitch St.
P. O. Box 3110
New Haven, CT 06515

Miniature-Size Noise Level Meter

A new compact noise meter has been developed in the Netherlands. Two models are in production with measuring ranges of 40 to 120 dB and 80 to 120 dB. Both models have the same dimensions: height, 3.9 in.; width, 1.5 in.; and depth, 1 in. The Diode sound level indicator weighs only 5-3/8 oz and is sufficiently compact to be carried in a jacket pocket. Powered by a 9-V battery, each of the two models has a measuring precision of ± 1.5 dB. The frequency characteristic is I.E.C. 123, curve A.

B. V. Diode
Hollantlaan 22
Utrecht, The Netherlands

Interface Module

General-purpose interface module for Data General Nova and Eclipse minis, and DCC look-alikes, accommodates up to 216 socket positions (24-, 28-, 40-, and 80-pin sockets). The epoxy glass boards are intended for wire-wrap breadboarding and permanent one-of-a-kind interface applications. The N100 module has 204 14/16-pin low-profile socket positions plus one universal, now with 130 socket mounting holes. Versions are available with wire-wrap pins only or with pins, sockets, and capacitors. Prices for individual boards start at \$375.

Interconnection Technology, Inc.
Hudson, NH 03051

Voice Generator

The Model 200 voice generator provides an analog of the human voice with a synthesizer circuit driven by highly compressed digital codes stored in ROM. The compressed digital codes are prepared offline by computer analysis of real speech. Stored vocabularies may include separate words or continuous phrases in either male or female voice. Codes are transmitted from memory to the synthesizer in short bursts, so many synthesizers can be operated independently from a single vocabulary memory. Evaluation units with a 48-word vocabulary are priced at \$2,500.

Speech Technology Corp.
Santa Monica, CA 90404

Film/Cassette Programmer

The Programmer-buhl permits you to record any sound and superimpose signals over the sound that will operate the slide changer of any remote-controlled projector. The unit accepts any quality compact cassette. It will record voice or music and place a silent 50-Hz signal over the sound every time the synch pulse button on its operating panel is pressed. When connected to a projector, it automatically changes projector images and plays back the pre-recorded sound in synchronization with the picture.

Buhl Projector Co.
60 Spruce St.
Paterson, NJ 07501

Used Computers

Used minicomputer systems: DEC PDP 8/L with 8K memory, an ASR 33, and a PR8L paper-tape reader is priced at \$3,395; a LINC 8 with 8K, dual processor, dual tapes, oscilloscope and ASR 33 is \$4,950; a Data General NOVA with 4K memory is advertised at \$1,750. All have 90-day warranties.

American Used Computer Corp.
P. O. Box 68
Kenmore Station
Boston, MA 02215

Random-Access Projector

A sophisticated random-access projector system (RAPII) is being marketed by ECC for \$1,800. The same company offers ECII, a self-contained general-purpose programmable simulator for operational readiness and maintenance training.

Educational Computer Corp.
175 Strafford Ave.
Strafford, PA 19087

Differential Amplifier

The Model 2124 amplifier is designed for physiological applications and can be interfaced directly with most CTSs, signal averagers, and FM tape recorders. Characteristics: 4.5 microV peak at a 10-kHz bandwidth and an impedance of 1,000 mohms with ac or dc coupling, a 60-Hz notch filter, gains of 50 to 300,000 and 18 position high- and low-frequency filters.

Data, Inc.
Box 2071
Fort Collins, CO 80522

Data Entry with a Wand

The data wand enters printed or typed data into a computer at rates of about 150 char/sec by simply waving the wand over the printed material. The wand can read alphanumerics, OCRA, OCRB, 1403, 7B, E13B, and MICR and upper- and lower-case characters. Data wand can be interfaced with terminal/computer hardware or supplied as an integrated system.

CompuScan
900 Huyler St.
Teterboro, NJ 07608

Wrist Blood Pressure Monitor

The Model ML-10 arterial tonometer is a small force transducer placed on the wrist with a Velcro strip. After calibration, the unit continuously displays systolic and diastolic pressures which can be read on a chart recorder or CRT.

Advanced Instrumentation Corp.
Box 103
7433 Hubbard Ave.
Middleton, WI 53562

Digital Data Recorder

The Model CC-7 digital data recorder is designed for computer and Teletype use (any baud rate up to 4,800) and is priced at \$149.95. The recorder loads 8K of memory in 17 sec. Recording mode: NRZ or tape saturation binary. Two channels: clock and data, or two data channels providing four tracks on the cassette. Inputs: two (will accept TTY, TTL, or RS232 digital). Outputs: two (board changeable from RS232 to TTY or TTL digital). Compatibility: Will interface any computer or terminal with a serial I/O (Altair, Sphere, PDP-8, etc.). The unit can be software controlled. Warranty is 90 days.

National Multiplex Corp.
3474 Rand Ave.
Box 228
South Plainfield, NJ 07080

Physiological Psychology Slide/Cassettes

The "Basic Principles of Neuroscience" and "Modular

Lab Sessions: Physiological Psychology" are instructional programs employing series of color slides and cassettes.

Life Science Associates
1 Fenimore Rd.
Bayport, NY 11705

Television Products

Tektronix is distributing a 96-page catalogue covering the company's television products. Write to: Tektronix, Inc., Box 500 A, Beaverton, OR 97005.

Digital Multimeter

Weston has introduced a new portable autoranging DMM priced at \$195. The Model 6000 is available for the five standard measurement functions. The unit is powered by 9-V transistor batteries and, when the batteries run low, the LCD display blinks.

Weston Instruments, Inc.
614 Frelinghuysen Ave.
Newark, NJ 07114

Minirecorder

The Memorecorder is two-track monaural with one-thumb control, AGC, instant replay, and fast rewind. The unit employs the Phillips/Norelco microcassette and is powered by a 9-V battery plus two AA penlight cells, or house current. The Memorecorder weighs 12 oz and measures 2-3/8 x 5-3/8 x 1-3/8 in. Price: \$60.

Unitrex of America, Inc.
689 Fifth Ave.
New York, NY 10022

Analog I/O

A single board analog I/O system for Intel's new single board computer is marketed by Data Translation. The DT 1751 system can process 16 analog input channels and has two analog output channels with power amplifier. The unit drives CRTs directly, using the built-in point plot controller. Real-time measurements are easily done with standard features such as external A/D trigger plus convenient interrupt operation. Optional switch gain amplifier extends dynamic range to 14 bits.

Data Translation, Inc.
109 Concord St.
Framingham, MA 01701

shutter which interrupts a light beam between a BaAs infrared LED and an npn phototransistor, the latter generating an output signal. It can be used as either a normally open or normally closed spot switch, depending on a simple mechanical adjustment. A dc source is required for the LED.

Optron, Inc.
1201 Tappen Circle
Carrollton, TX 75006

DIP Plugboard for Microprocessors

The new DIP plugboard is designed to accept two supply voltages, is copper clad on both sides for shielding and to supply primary power (positive on one side, negative on the other), with interwoven zig-zag lines (also on both sides) to facilitate power distribution. The Model 4350 board will hold 63 14- or 16-pin DIPs or five 24-pin microprocessors and 45 DIPs. Price is \$14.95.

Vector Electronic Co., Inc.
12460 Gladstone Ave.
Sylmar, CA 91342

Electronic Musical Instruments

Anyone interested in the design and assembly of electronic musical instruments may find it worthwhile to investigate the standard ICs offered by American Microsystems. Among devices available are the S2555 and S2566 top-octave synthesizers, the S2566 rhythm generator ROM, the S8890 rhythm generator, the S2567 resettable rhythm counter, the S2470 six-stage frequency divider, the S50240 series of top-octave synthesizers, and the S2193 seven-stage frequency divider. Unit prices range from \$4.50 for frequency dividers and S2567 resettable rhythm counter to \$22.50 for the S8890 rhythm generator.

American Microsystems, Inc.
3800 Homestead Rd.
Santa Clara, CA 95051

New TV Camera

Fairchild has developed a third-generation charge-coupled-device (CCD) television camera, the Model MV-201, which has 244-line resolution and a bandwidth of 1.86 MHz. It is sensitive to as little as .000125 fc of illumination at the CCD elements. Weight is only 12 oz and it is 2 in. high, 2.5 in. wide, and 3.75 in. long. Interfacing directly with conventional TV monitors, the camera requires only 4 W at 12 V.

Fairchild Imaging Systems Division
300 Robbins Ln.
Syosset, NY 11791

Mini-Based Graphics Display System

Tektronix has developed a mini-based graphics

BRIEFS

Lever-Actuated Solid State Switch

The OPS 100 optical limit switch does not use mechanical switch contacts. Instead, the lever arm operates a

display system priced at \$27,000. The 4081 is a mini-based storage and refresh display system that includes the 19-in display, an Interdata 16-bit mini, 32 k-byte MOS memory, display controller, keyboard, character generator and function keys, 250 k-byte tape cartridge drive, communications interface and software. Optional equipment includes a floppy cartridge disk, 132-column printer, plotter, tablet, and additional tape cartridge.

Nonparametric measures of sensitivity and response bias: Tables of SI and RI

(Submitted by D. B. Berch and F. H. Osborne, Morehead State University, Morehead, Kentucky 40351)

Frey and Colliver (1973) have recently devised nonparametric measures of both sensitivity (SI) and response bias (RI) for use in the discrimination learning paradigm. Although these indices may be obtained graphically from the unit square, Frey and Colliver have also derived the following formulas which permit the computation of SI and RI in terms of hit rate (HR) and false-alarm rate (FAR) values:

$$SI = \frac{HR - FAR}{2(HR + FAR) - (HR + FAR)^2} \quad (1)$$

$$RI = \frac{HR + FAR - 1}{1 - (HR - FAR)^2} \quad (2)$$

Thus far, these measures have been applied primarily to data from studies of differential eyelid conditioning in rabbits. However, following a suggestion by Frey and Colliver, Berch (1975, 1976) has recently demonstrated the utility of these indices for studies of human memory. As an example, a major advantage of using RI for the continuous recognition paradigm (Shepard & Teghtsoonian, 1961) is the fact that it is a measure of performance or guessing bias, whereas its TSD counterpart, β , is essentially a measure of "signalness" or perceptual bias.

Despite such advantages, the sheer tediousness of the computations involved serves as a potential deterrent to the implementation of these measures on a broad scale. Although the equations themselves consist of relatively simple operations, it is almost prohibitive to make use of them when one has to calculate indices for many subjects under a number of different treatment conditions. Consequently, to reduce computation time and thereby, hopefully, increase the likelihood that investigators will use these measures more extensively, we have generated a table of SI and RI values. This table can be used for those cases in which a subject's hit rate exceeds his false-alarm rate ($HR > FAR$). The values of HR and FAR covered by the table range from 1.00 to .01 and from .99 to .00, respectively. Copies of this table may be obtained free of charge from the first author.

REFERENCES

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- BERCH, D. B. Criterion change in continuous recognition memory: A sequential effect. *Bulletin of the Psychonomic Society*, 1976, **7**, 309-312.
- FREY, P. W., & COLLIVER, J. A. Sensitivity and responsivity measures for discrimination learning. *Learning and Motivation*, 1973, **4**, 327-342.
- SHEPARD, R. N., & TEGHTSOONIAN, M. Retention of information under conditions approaching a steady state. *Journal of Experimental Psychology*, 1961, **62**, 302-309.

Video Graphics Board for OSI System

The Model 445 produces a conventional 1,024-character display with video outputs (a board-compatible FCC-approved transmitter is available from another source for \$8.50). The 445 is \$99.

The Model 440 video graphics board is the kit form which sells for \$29. The unit automatically displays at 32 rows of 32 ASCII characters per row. The 440 board with an ASCII V series PROM monitor provides both computer and TV typewriter terminal functions

OSI

11679 Hayden St.
Hiram, OH 44234

OSI Microcomputer

The Model 400 Superboard is a complete computer on one PC board. The Superboard can be used alone with a terminal or with an I/O device and a dedicated program as a high-speed controller. The board can be expanded via OSI system expansion boards. Maximally, it can have a processor with a clock system which will service different speed memories, 512 bytes of PROM, 1,024 bytes of RAM, an ACIA with RS-232 or 20-mA loop interface, a PIA with 16 I/O lines and full buffering for system expansion.

OSI

11679 Hiram St.
Hiram, OH 44234

RAM Interface for PDP-11

A new random-access head-per-track memory has been designed to interface with the PDP-11 minicomputer by the Vermont Research Corporation of North Springfield, VT 05150. The Model 4401 drum memory is claimed to be functionally equivalent to the DEC RC11/RS64 memory and to provide drum reliability at lower cost than most disk systems. The 4401 has memory capacities up to two million 16-bit words and an average access time of 8.5 msec, though lower capacities and slower access times are available.

New Peripherals for Data General Computers

Data General computer users are now provided with

a line printer controller, a real-time clock, four asynchronous communication channels, and, optionally, a Teletype I/O port, all on one printed circuit board by Media III of Anaheim, CA. The 2804 asynchronous multiplexer board contains four asynchronous communication channels, a 100-Hz real-time clock, and a parallel line printer interface to a Centronics, Data Products, Tally, or Printronix line printer. Switches in each communications channel allow baud rate selection in seven steps from 110 to 9,600 baud.

Microprocessors

Fairchild's Microsystems Division (1725 Technology Dr., San Jose, CA 95110) has introduced a new microprocessor design kit on a fully assembled circuit board which comes complete with connecting cable for power supply and terminal hook-up. The circuit board contains Fairchild's 3850 F8 CPU device, the 3851 program unit circuit, the 3853 static memory interface circuit, and eight 2102 static RAMs. Complete kit is priced at \$185.

Signetics reduced the price of its Model 2650 general-purpose 8-bit 5-V TTL-compatible n-channel microprocessor from \$72 to \$26.50. Motorola reduced the price of its 6800 8-bit n-channel device from \$69 to \$35. The Motorola MC 6860 modem is reduced from \$32 to \$17.

Digivue Display Panel

Selling prices on the Digivue 512-60 display panel, with or without driving electronics, have been reduced an average of 8%, according to Owens-Illinois (Toledo, OH 43666). The 512-60 plasma display panel has an active area of 8½ sq in., with the complete panel ½ in. thick. It utilizes a dense grid of more than 260,000 individual plasma sites, which are electronically activated to form clear, high-resolution characters and graphics. The panel is transparent, allowing rear projection of microfiche data.

SKED Microprocessor System

D. Loveland is marketing a microprocessor system that is DEC PDP 8/E software compatible and will run a version of SKED. The SKED microprocessor is said to be running 24 h/day without difficulty. The system can be relocated and used during the same day without the need of installing expensive cables, and will connect to any DEC-compatible ASR-33 Teletype. However, any ASR-33 Teletype can be easily modified to be compatible; detailed instructions for modification can be provided. All major components are installed in sockets and are easily replaceable, without unsoldering, should the need arise.

Timing accuracy of a running SKED user's program is claimed to be excellent. The SKED microprocessor system will run the SKED User's Group program RT54PT. BN and COMPV2. BN.

Total cost is \$2,650, completely assembled and tested, but not including shipping or insurance costs. Total weight of the system is 35 lbs. The 120-day warranty covers all labor and material costs involved in repair. Spare modules are available for an exchange arrangement. The price does not include a Teletype.

Donald H. Loveland
720 William James Hall
33 Kirkland St.
Cambridge, MA 92138

On-Line Computer Conference

The sixth annual meeting of the *National Conference on the Use of On-Line Computers in Psychology* will be held on November 10, 1976 at the Busch Memorial Center, Saint Louis University, Saint Louis, MO. The Conference is held the day before the Psychonomic Society meetings. Individuals interested in joining the Conference and attending the meetings are invited to write to Richard B. Millward, Secretary-Treasurer, Department of Psychology, Brown University, Providence, RI 02912.