

new products

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers, and in some cases by independent sources. PHYSICS TODAY can assume no responsibility for their accuracy. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

High-voltage power supplies with digital monitoring

Bertan has made available two high-voltage supplies for detectors, Model 323 and Model 325. Each has an LCD front-panel meter that displays output voltage and current. Both supplies are double-width NIM units. The output-voltage ranges of the Models 323 and 325 are 0-3 kV and 0-5 kV, respectively. The ripple is less than 0.0005% peak to peak; regulation is 0.001% for line fluctuations and 0.002% for load fluctuations. Both units are polarity reversible and have front-panel LED polarity indicators. One can control the units remotely. The Model 323 is priced at \$795 and the Model 325 at \$820. *Bertan Associates, 121 New South Road, Hicksville, New York 11801*

Circle number 140 on Reader Service Card

Rotary feedthroughs for vacuum chambers

The vacuum rotary feedthroughs introduced by Shrader Scientific provide rotary motion within a vacuum chamber. A positive-pressure lip-seal design is said to provide optimal seal compression at all times and ball bearings support the stainless-steel shaft. We are told that the feedthroughs have been fully tested under vacuum and have attained millions of revolutions without leakage. Two sizes are available: a bolt-through design with a 0.250" shaft diameter and a tapped nose configuration with a 0.187" or 0.250" shaft diameter. *Shrader Scientific, P.O. Box 57287, Hayward, California 94545*

Circle number 141 on Reader Service Card

Digital delay generator with wide timing range

The new Model DG-535 digital delay generator introduced by Stanford Re-

search Systems is designed for uses where one must control the precise timing of events over a wide range. Applications include laser Q-switching, high-speed photography, laser synchronization and high-speed logic testing.

The Model DG-535 has four channels



with delays that can be set between 0 and 1000 sec with increments of 5 picosec. One can set each of the delay outputs, T_0 , A, B, C and D, and the gate outputs, AB and CD, to standard logic levels (TTL, ECL, NIM and their complements), or one can specify the offsets and amplitudes. The outputs drive 50- Ω or high-impedance loads with a slew rate of 1 V/nsec. We are told that all delays are accurate to 25 ppm over the operating temperature range, and that the jitter is 50 psec RMS with respect to an external trigger. An accuracy of 1 psec is available as an option.

One can enter delay values as decimal numbers or in scientific notation and view these values on a large liquid-crystal display on the front panel. The instrument is equipped with a full GPIB interface. Rack mounting, 15-V rear-panel outputs and a 1-ppm temperature-compensated crystal time base are available as options. *Stanford Research Systems, 460 California Avenue, Palo Alto, California 94306*

Circle number 142 on Reader Service Card

Microprocessor controlled lock-in amplifier

Ithaco has made available the Model 3961, a new dual-phase lock-in amplifier that is microprocessor controlled



SIGNAL PROCESSING SOFTWARE AND HARDWARE FOR YOUR PC

TMS 32010 Hardware/Software

For your IBM PC, XT, or AT with the 320/PC CARD. TMS 32010, A/D, D/A on the board and utility software. Debugger, loader, real-time efficiency monitor and patch processor, and signal acquisition and editing utilities. The Algorithm Development Package priced under \$2,000.

Software for Digital Filter Design

For your IBM PC, XT, AT or compatible. Design Butterworth, Chebyshev, Elliptic, Kaiser window and Parks-McClellan filters for general purpose and TMS 320-specific implementations. Now available (version 2.0) with arbitrary magnitude FIR filter design capability. Generates TMS 32010 assembly code for filter implementation. Priced starting at under \$1000.



Atlanta Signal Processors, Inc.
770 Spring St., Atlanta, GA 30308
(404) 892-7265

Circle number 22 on Reader Service Card

ALPHA SPECTROSCOPY

From The Simple

This single-channel Alpha Spectrometer features the versatile 7400A Vacuum Chamber and the low noise 7404-01 Preamp/Amplifier. With the S-20 MCA and its built-in detector bias supply, this system provides uncompromising performance at extremely low cost. A wide choice of SSB detectors and all the accessories necessary to complete or enhance your Alpha Spectroscopy System are readily available from Canberra.



CANBERRA

Canberra Industries, Inc.
One State Street
Meriden, Connecticut 06450
(203)238-2351

Circle number 23 on Reader Service Card

new products

and can be interfaced with a computer through either an IEEE-488A bus or an RS-232 serial port. The frequency range is 10 Hz to 100 kHz; with an external reference, one can use the amplifier at frequencies up to 200 kHz. One can select tunable, pre-detector filter characteristics for the rejection of harmonics and the increase of dynamic reserve.

An auto-function key group allows setting the instrument in a dynamic-reserve, auto-phase, auto-gain-range and auto-frequency-tune mode. An auto-tune function sets the pre-detector filter exactly to the reference frequency. One can select three signal modes: high, medium and low dynamic reserve, which are 70, 50 and 30 dB, respectively. The output stability is then 1000, 100 or 30 ppm/°C, respectively. *Ithaco, 735 West Clinton Street, P.O. Box 5437 Ithaca, New York 14851*

Circle number 143 on Reader Service Card

Scanning-electron microscope with simultaneous detection

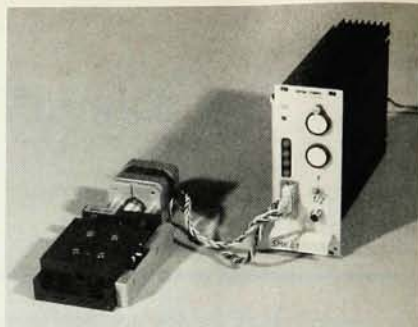
With the new SEM 525-M scanning electron microscope from Philips one can bring the tip of the objective lens close to even a bulky specimen because of the conical design of the objective lens. The lens maintains high imaging performance and efficient operation at acceleration voltages from 0.2 to 30 kV. The SEM 525-M permits the simultaneous operation of several detectors, offering the operator parallel channels for maximum collection of real-time information. All detection systems can see the point of observation on the specimen. The operator can manipulate and reposition a specimen of up to 6" with a motorized specimen stage and a joystick. The microprocessor stores up to 100 specimen coordinates, which can be instantly recalled to return the microscope to any chosen location on the specimen.

The microscope may be linked to a computer for external control of major parameters. It also features automatic focusing and automatic correction of astigmatism. *Philips Electronic Instruments, 85 McKee Drive, Mahwah, New Jersey 07430*

Circle number 144 on Reader Service Card

Positioning table with stepper motor

Control Technics has made available a positioning table for simple control motions that is driven by a stepper motor. The system consists of a dovetail table,



a stepper motor mounted on the table, an optional limit switch and a control unit for the stepper motor. One can select steps of 1 or 1/2 micron, and the table translates with a maximum speed of 800 steps per second. The motor shaft has an extension to carry a knob for manual corrections. The table can be mounted in x, y and xyz configurations without the need of transfer plates. The system is priced at \$986. *Control Technics, 22600-C Lambert Street, Unit 909, El Toro, California 92630*

Circle number 145 on Reader Service Card

Voltage controlled driver for laser diodes

Liconix has made available the LDD-100 laser-diode driver for use with high-quality, high-power laser diodes of varying wavelength and power output. The driver is specifically designed for the SDL-1400, SDL-2410 and SDL-2420 and 2450 series of high-power laser diodes manufactured by Spectra Diode Labs.

The LDD-100 is a high-speed voltage-controlled current source delivering up to 500 milliamps. The driver can be operated in an open-loop mode for high-speed modulation by digital or analog signals at constant peak current or under internal or external current control. One can operate the driver in a closed-loop mode for optical power modulation using feedback from the internal photodiode. The diodes are protected from on-off spiking in both modes. *Liconix, 1390 Borregas Avenue, Sunnyvale, California 94089*

Circle number 146 on Reader Service Card

Programmable power supplies with multiple outputs

Hewlett-Packard has introduced four new programmable power supplies with different combinations of 40- and 80-W outputs. Each output can supply full output power at either of two separate output-voltage ranges. The HP 6621A has two 80-W outputs of 0-20 V each at 0-4 amps or 0-7 V at 0-10 A;

the 6622A has two 80-W outputs of 0-50 V each at 0-2 amps or 0-20 V at 0-10 A; the 6623A has one 80-W output and two 40-W outputs, and the HP 6624A has four 40-W outputs. The available voltage ranges for the two latter supplies are 0-7, 0-20 and 0-50 V.

The IEEE-488 programming interface built into the power supplies allows the implementation of several functions, including voltage and current setting, output voltage and current measurement, setting overvoltage protection, enabling and disabling overcurrent protection, and enabling or disabling output channels. One can implement most of these functions also from the front panel, and one can store up to ten preset output values, reducing the number of commands needed for fast repetitive programming. The HP 6621A and 6622A are priced at \$2700 each; the HP 6623A costs \$3200 and the HP 6624A costs \$3700. *Hewlett-Packard, 1820 Embarcadero Road, Palo Alto, California 94303*

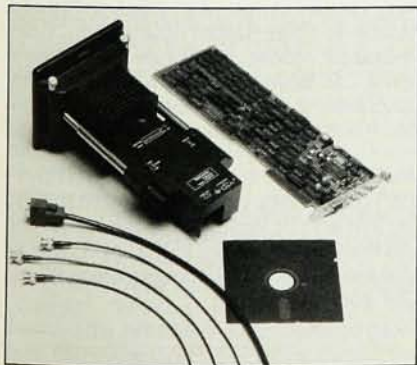
Circle number 147 on Reader Service Card

Digitizing camera for analog oscilloscopes

Tektronix has introduced a digitizing camera system with a charge-coupled device that one can use to make waveforms produced by analog oscilloscopes computer readable. The camera connects to the oscilloscope bezel like a conventional crt camera and detects the light given off by the phosphor of the screen. The signal is transmitted to a plug-in board containing video and analog-digital conversion circuits, where it is stored and processed. The board plugs into an IBM PC for subsequent data manipulation and analysis by the computer.

The digitizing camera system can capture repetitive signals at the bandwidth of any analog oscilloscope. It captures transient events at up to two-thirds the analog bandwidth; for oscilloscopes with microchannel-plate tubes, the system acquires transient events at full bandwidth.

The software package for the system requires MS-DOS, version 2.1 or high-



er, and provides comprehensive waveform graphics and analysis. The minimum requirements for the IBM PC, XT and AT, or compatible computers, are a memory of 384 kilobytes, a graphics card and a math coprocessor. *Tektronix, P.O. Box 500, Beaverton, Oregon 97077*

Circle number 148 on Reader Service Card

Multimode fiberoptical variable attenuator

The Model 210 portable fiberoptical attenuator introduced by Intelco is designed for multimode optical-margin and fiber-loss measurements. The instrument uses anti-reflective coatings and expanded beam technology and is accurate to ± 0.5 dB over a 10-40-dB range. One can select calibrations between 850 and 1300 nm. One can vary the attenuation continuously from the insertion loss to 50 dB; the insertion loss is under 2.5 dB.

A liquid-crystal display shows the attenuation with a resolution of 0.1 dB; the insertion loss is accounted for in the displayed readings. Two display modes are available: The absolute mode displays the total attenuation selected, while the relative mode displays the difference between a preset level and the actual attenuation.

An internal lithium battery powers the instrument for over ten years under normal use. The device measures $10'' \times 10.25'' \times 3.75''$ and weighs under 6 lb. It is priced at \$2500. *Intelco, 8 Craig Road, Acton, Massachusetts 01720*

Circle number 149 on Reader Service Card

New software

Frequency-spectrum analysis—SNAP-FFT, a frequency-spectrum analysis package from HEM Data, converts time-domain data acquired with HEM's Snapshot storage scope to the frequency domain using a fast-Fourier-transform algorithm. The software is menu driven and runs on the IBM PC and compatible computers. *HEM Data Corporation, 17025 Crescent Drive, Southfield, Michigan 48076*

New literature

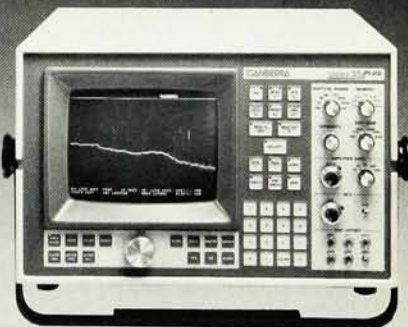
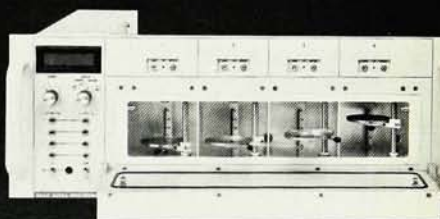
Software for micros and minis—Elsevier has published *The Software Catalog: Science and Engineering*, a description of over 3600 programs for scientific, industrial and professional applications. A subject and application index and various systems indexes facilitate the finding of appropriate programs. *Elsevier Science Publishing, 52 Vanderbilt Avenue, New York, New York 10017*

ALPHA SPECTROSCOPY

To The Sublime

The 7404 Quad Alpha Spectrometer, unlike any other, was designed from the ground up as a multi-channel system. This is why the 7404 alone has such important features as digital readout of detector bias, leakage current, vacuum level, and pulser energy along with provisions for sample bias and vacuum/bias interlock to protect your SSB detectors.

The S-35 PLUS MCA with our 8222 Gated Mixer-Router completes a four-channel system which is truly elegant as well as economical.



CANBERRA

Canberra Industries, Inc.
One State Street
Meriden, Connecticut 06450
(203)238-2351

Circle number 24 on Reader Service Card