

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.

Transient recorder with 30-channel capability

The new Series SE 560 transient and waveform recorders introduced by BBC-Metrawatt/Goerz are modular in design and can handle up to 30 channels of signals with frequencies up to 250 kHz. The units accept floating inputs from 50 mV to 50 V. One can expand the range of input parameters by using voltage or current probes. The design incorporates a thermal-array hard-copy recorder that can print out a complete measuring protocol with graphic and alphanumeric information. The memory capacity can be 2, 4, 8 or 16 bytes (8-bit words) per channel. One can view the stored data with an oscilloscope or chart recorder. One can also transfer data to a computer via an RS 232C or IEEE 488 interface. The price of a single-channel recorder is \$2400. BBC-Metrawatt/Goerz, 2150 West 6th Avenue, Broomfield, Colorado 80020
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High-capacity cold head producing 14 W at 20 K

Balzers's new high-capacity cold head, the UCH 110, has 100 W of power

available on the first stage and 14 W on the second stage at a temperature of 20 K. The unit can reach bottom temperatures as low as 10 K. It incorporates a new brushless dc motor, enabling it to operate at the same speed with either 50- or 60-Hz ac. The cold head is driven by the new UCC 110 high-capacity helium refrigerator compressor, available in 50- or 60-Hz three-phase versions. Balzers, 8 Sagamore Park Road, Hudson, New Hampshire 03051

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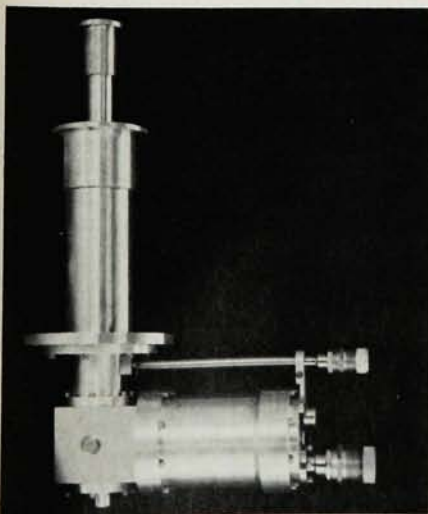
Pulse amplifier for nmr spectroscopy

The new solid-state power amplifier introduced by ENI, the Model 5100-NMR, has a frequency range of 5-400 MHz and a linear output of 100 W in class-A operation. The amplifier can produce a saturated power output of up to 200 W at frequencies lower than 200 MHz. The output can be pulsed on and off by any TTL-compatible pulse source; the maximum duty cycle is 100%. The rise and fall time of the rf envelope is less than 10 μ sec, and the level of noise rejection is more than 50 dB, which is said to reduce or eliminate the need for external noise-clipping diodes at the output. The high stability and an instantaneous fail-safe provision protect the device from transient or overload conditions, as well as from rf-load mismatch from an open to a short circuit. The unit is priced at \$10 900. ENI, 100 Highpower Road, Rochester, New York 14623

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Broadband attenuator for YAG lasers

Newport has introduced a new variable broadband laser attenuator. The Model 935-10 provides up to 27 dB of attenuation over the range 0.2-2.1 microns. The 10-mm aperture and high threshold for pulse damage (greater than 3 J/cm²) make the attenuator suitable for



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new products

use with high-powered YAG lasers, we are told. Attenuation is obtained by Fresnel reflection in four counterrotating fused silica wedges. One can vary the attenuation by turning a single knob, and one can reset it to within 0.05 dB. Variations in the beam intensity are claimed to have a negligible effect on the beam profile, position and direction. The enclosure, which has an average power dissipation of more than 20 W, traps all rejected radiation. The unit is priced at \$3850. *Newport Corporation, P.O. Box 8020, Fountain Valley, California 92728*

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Multiheterojunction GaAlAs laser 200 mW output

Spectra Diode Labs has introduced a new series of laser diodes with an output of 200 mW cw at room temperature. They can be used for the optical pumping of YAG and similar materials. A diode operating at 810 nm is available for this purpose. Other applications include illumination, range finding and distance measurement, machine vision, satellite and point-to-point communication, particle counting, robotics and structured light, printing and optical data storage.

The SDL-2420 series is available in several forms, including a window package, a fiber-coupled package and an open-heat-sink package for research applications and high-frequency modulation.

The multiheterojunction GaAlAs laser diodes are produced by metallorganic chemical-vapor-deposition techniques. The resulting layered structure produces multiple quantum wells and is said to provide a low threshold and high efficiency. The SDL-2420-C (open-heat-sink version) is priced at \$2550; the SDL-2420-H1 (TO-3 window package) is priced at \$2650. *Spectra Diode Labs, 333 North First Street, San Jose, California 95134*

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Microwave spectrum analyzer covering 10 MHz to 22 GHz

Hewlett Packard has introduced the HP 8570A, a spectrum analyzer covering 10 MHz to 22 GHz. One can select a display range that is 1.7-22 GHz wide; the analyzer can display a spectrum for the entire selected range in a single sweep, making it easier to find a signal whose exact frequency is unknown. Having tuned in to a signal, the operator can analyze it by setting two controls, one for the frequency span and



one for the reference level. The instrument adjusts the resolution and video bandwidths automatically. One can connect a graphics plotter directly and control it from the front panel without the need of a computer.

A digital display provides two independent traces for trace comparison and storage. By connecting the spectrum analyzer to a computing controller (such as the HP 9000 Series 300 engineering work station) one can improve the measurement efficiency.

The center-frequency accuracy is $\pm 0.3\%$ and one can increase it to $\pm 0.7\%$ with the Option 001 internal comb generator. The average noise level at 18 GHz is -90 dBm/kHz . The unit is priced at \$25 000. *Hewlett Packard, 1820 Embarcadero Road, Palo Alto, California 94303*

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Tetrode with an output of 2 MW at 100 MHz

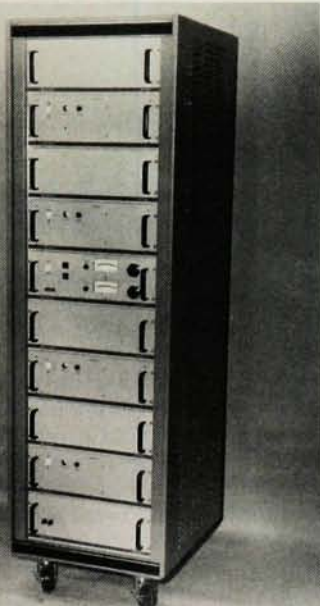
Thomson-CSF has added the TH 525 to its line of power tetrodes designed for particle accelerators and for plasma heating in fusion experiments. Used as a high-power pulsed amplifier it can deliver 2 MW in class-B operation at 100 MHz. At a slightly lower frequency the tetrode delivers even more power, for example 2.5 MW at 90 MHz. A similar tube, the TH 526, operates at higher frequencies but with lower output power. It delivers 1.5 MW at 100 MHz and 1 MW at 120 MHz. *Thomson-CSF, 301 Route 17 North, Rutherford, New Jersey 07070*

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High-voltage power supply with an output of 15 kW

The new Model RHP15KW high-voltage power supply from Spellman High Voltage Electronics is available in versions with maximum output voltages ranging from 3000 to 60 000 volts. The voltage can be set to any value between 0 V and the maximum. The efficiency of the unit is 90%. The power supply contains a high-frequency resonant inverter circuit that provides voltage and current regulation of up to 0.02%, a ripple of 0.2% and a stability of 0.2% over 1 hour of operation. One can

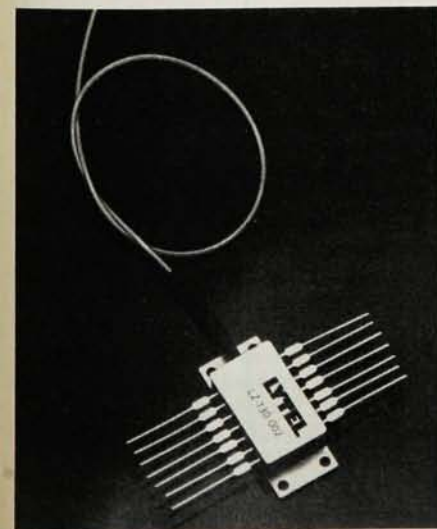
operate the unit remotely by programming it via an optional front-panel interface. Other available options include floating-ground operation, digital panel meters, voltage and current test



points, bipolar operation and a floating filament supply for x-ray tubes. The unit is housed in a fully enclosed cabinet of 70×24×26 inches. *Spellman High Voltage Electronics, 7 Fairchild Avenue, Plainview, New York 11803*
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InGaAsP laser modules for high-speed applications

Lytel has added a new InGaAsP laser to its line of high-speed laser modules: the LZ-130-002, emitting at 1300 nm. The module is available as a "butterfly" 14-pin DIP package, hermetically sealed and incorporating a thermoelectric cooler. It delivers power through a 40-inch single-mode fiber; the power delivered at the end of the fiber is



greater than 1 mW. The modules are submitted to a combination of electrical, high-temperature-stress and power-aging tests; only those devices that have a stable aging rate and well-defined temperature behavior are selected for distribution. The selection procedure, we are told, insures the reliability of the units. *Lytel, 61 Chubb Way, Somerville, New Jersey 08876*
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Parabola for collimating light from tunable diode lasers

Spectra-Physics has announced a new 90° f/1.5 off-axis parabola for the collection and collimation of radiation emitted by tunable diode lasers, to be used in conjunction with the Model SP5800 laser-source assembly from Spectra-Physics. The parabola operates over the entire wavelength range in which laser diodes are available, 2.7–30 microns. The surface quality of the parabola is $\frac{1}{4}$ fringe at 632.8 nm, as measured by interferometry. The parabola is available as a replacement for the collimating-lens assembly on the SP5150 and SP5155 monochromator systems. *Spectra-Physics, 25 Wiggins Avenue, Bedford, Massachusetts 01730*
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New software

Physics education—Cross Educational Software has introduced an educational software package for high-school and college physics courses. The "General Physics Series," designed for the IBM-PC family, consists of 114 programs on 12 disks and is designed to accompany standard physics textbooks. *Cross Educational Software, 1802 North Trenton Street, Ruston, Louisiana 71270*

Autographing and regression analysis—Galileo Scientific has released E-Z GRAPH II, a new version of its autographing subprogram, and FIT, a new regression-analysis subprogram. Both are for the HP9000 Series 200 desktop computers. *Galileo Scientific, 20312 Aspenwood Lane, Gaithersburg, Maryland 20879*

Data acquisition—Creare has introduced two new software packages for the Masscomp computer. The Integrated Data Acquisitions and Reduction System is a comprehensive package for acquiring and analyzing data and generating graphic displays. The second package, Scanalyzer, permits the acquisition and recording of data while the computer performs many of the functions of a digital oscilloscope and spectrum analyzer. *Creare, Etna Road, P. O. Box 71, Hanover, New Hampshire 03755* □

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- Pulse pile-up rejection input

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