

NEW PRODUCTS

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. 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.

LAWRENCE G. RUBIN

FOCUS ON TEST AND MEASUREMENT

High-Voltage DC Power Supplies

Glassman High Voltage has introduced the LK series of 3-kW, switching, high-voltage DC power supplies with fast response regulation and with a static voltage regulation better than 0.005% for allowable line variations and 0.01% for allowable load variations. The supplies offer automatic crossover from constant voltage to constant current regulation, which is better than 0.1% from short circuit to rated voltage. The six models in the LK series range from 0–40 kV at 75 mA to 0–100 kV at 30 mA, provide low ripple and noise, and offer active power-factor correction while requiring only a single-phase input voltage. The new series continues to feature the company's air-insulation technology and proprietary arc-sensing and quench circuitry that will suppress arcing conditions that can occur regularly. *Glassman High Voltage Inc, 124 West Main Street, P.O. Box 317, High Bridge, New Jersey 08829-0317, <http://www.glassmanhv.com>*

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Thermoelectric Temperature Controller

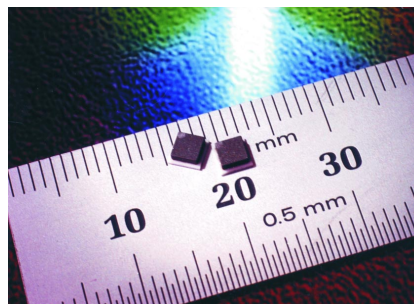
Wavelength Electronics has announced the WTC3243, an analog proportional/integral control-loop hybrid circuit for use in ultrastable thermoelectric control applications above and below ambient. The device incorporates a ceramic substrate and is offered in a small package size ($3.3 \times 3.2 \times 0.8$ cm). It maintains precise temperature regulation using a circuit with an adjustable sensor bias current and an error amplifier that operates directly with thermistors, resistance temperature detectors, and electronic sensors. The WTC3243 features a voltage-controlled set point,

up to 2 A of heating and cooling current, and independent limits on those currents. Higher output currents are attainable by connecting two or more units in a master/slave configuration. *Wavelength Electronics, P.O. Box 865, Bozeman, Montana 59771, <http://www.teamwavelength.com>*

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Broadband Power Amplifier

The model CMM6004 from Celeritek is a new high-dynamic-range amplifier for transmit and receive functions in fixed wireless and wireless local area network (LAN) applications where high linearity is required. The amplifier operates from 0.25 to 7.0 GHz and offers 18 dB of gain, an



output intercept point of 41 dBm (an indicator of intermodulation products), and a current consumption of 180 mA. It operates from 0.8 to 2.2 GHz in cellular and personal communications service, from 2.2 to 2.7 GHz in multichannel multipoint distribution systems, at 2.4 GHz for wireless LAN and at 3.5 GHz for wireless local loop applications, and from 5 to 6 GHz for unlicensed national information infrastructures. The amplifier is supplied in a space-efficient land grid array package (see figure). *Celeritek, 3236 Scott Boulevard, Santa Clara, California 95054, <http://www.celeritek.com>*

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Charged Plate Monitor

The TREK model 158 charged plate monitor is an instrument for evaluating the performance of air ionization systems. It features a color display of discharge waveforms, offset voltage in the time domain, and the data and waveforms for hundreds of ionizer tests. A PC flash memory card provides ample data storage and an easy data transfer. The model 158 uses the company's voltage-follower technique that provides virtually no loading effect on the ion collecting plate, while allowing the plate to be charged and monitored through the same small-diameter cable. For those applications demanding very strict ion balance, the charged plate monitor can resolve 0.1-V plate voltage. The model 158 can be line or battery operated and is shipped with two battery packs. *TREK Inc, 11601 Maple Ridge Road, Medina, New York 14103, <http://www.trekinc.com>*

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Digital Noise Generator

Noise Com's DNG7500 generates programmable, user-specified, pseudo-noise and CW signal spectrums for RF, microwave, and fiber-optic equipment testing. It can provide a 70-MHz RF spectrum output including any combination of noise and signals with precise relative amplitudes, adjacent to or occupying overlapping frequency positions. The DNG7500 can generate digitally simulated, additive, white Gaussian noise with settable parameters such as precise start and stop frequencies with brick-wall filters, tilt, and stop-band filtering, all with programmable frequency, bandwidth, and depth. The parameters can be entered via keypad and a color graphical user interface. At the heart of the DNG7500 is a 14-bit, 150-megasample/s arbitrary waveform generator with up to 64 megabytes of memory. *Noise Com, East 64 Midland Avenue, Paramus, New Jersey 07652, <http://www.noisecom.com>*

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Temperature Block Calibrator

Hart Scientific's model 9011 is a dry-well temperature calibrator that features two independently controlled temperature wells with a hot-block, cold-block combined range from



–30°C to 670°C. While readings are being taken at one temperature, the other well can be ramping up or down to the next point. Users can choose from four standard multihole inserts; up to eight 6.35-mm-diameter probes (resistance temperature detectors or thermocouples) can be calibrated simultaneously. The 9011 offers temperature stability to $\pm 0.01^\circ\text{C}$ and display accuracy to $\pm 0.25^\circ\text{C}$. A single RS-232 port for both wells is standard, along with free instrument control software. *Hart Scientific, 799 East Utah Valley Drive, American Fork, Utah 84003-0775, <http://www.hartscientific.com>*

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High-Voltage DC Power Supply

Computer Power Supply has developed the model 2800 universal high-voltage power supply, designed for capacitor charging at constant power. It can also be used as a bench supply with constant voltage, constant current, or constant power; the mode of operation can be factory pre-set or user selectable. The 2800 features a programmable 0–15 kV positive or negative output with a 55-mA current limit, and up to 135 W of output power. It offers stability and regulation of better than 0.5%, has arc- and short-circuit protection, and adjustable over-voltage and over-current limits. The 2800 requires a voltage input as low as 12 V DC. *Computer Power Supply, 7313 SW Tech Center Drive, Tigard, Oregon 97223, <http://www.cpslv.com>*

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RF Multiplexer Modules

Keithley Instruments has introduced models 7711 and 7712 RF switch modules for use in the company's 2700 (two-slot) or 2750 (five-slot) multimeter/switch mainframes. The 7711 offers RF switching to 2 GHz, while the 7712 extends the capability to 3.5 GHz. RF switching allows the integra-

tion of high-frequency measurements with DC and low-frequency electrical testing. Both modules provide a 50-ohm, dual (single-pole/four-throw) multiplexer configuration, which can be cascaded to build scalable matrix and multiplexer systems for a large number of devices being tested and RF source-measuring instruments. The new switch modules are designed for low-loss RF and digital signal routing in test systems used in telecom, aerospace and defense, electronic component, and related industries. *Keithley Instruments Inc., 28775 Aurora Road, Cleveland, Ohio 44139-1891, <http://www.Keithley.com>*

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Closed-Loop Motorized Stages

New Focus has announced a family of closed-loop motorized linear, rotary, goniometer, and z-axis wedge stages that offer accurate, high-resolution motion control and placement. They feature a combination of speeds of greater than 100 mm/s and a bidirectional repeatability of less than 150 nm, which allows users to move the stages quickly and with fewer errors.



The stages come with built-in limit switches, easy-to-use drivers, and high-resolution position encoders for accurate positioning to better than 50 nm. That accuracy is usually adequate for a wide range of automated motion-control applications, including complex fiber-optic alignment, sample probing and placement, micromachining, deep-UV lithography, wafer positioning, and laser welding and cutting. *New Focus Inc., 5215 Hellyer Avenue, San Jose, California 95138-1001, <http://www.newfocus.com>*

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Vibration Isolation Workstation

The 9100 series vibration isolation workstations from Kinetic Systems can be configured for applications in which external vibrations adversely

affect the operation of sensitive equipment. The workstations are available with either 800- or 1300-pound load capacities; the 800-lb model is field convertible to 1300 lbs. Tabletops range from 24 × 36 in. to 36 × 72 in. and are available in lightweight honeycomb or composite. All units feature the company's Active-Air suspension, which provides a vibration-controlled environment with low natural frequencies and excellent vertical and horizontal efficiencies. A preset zero deflection level is maintained regardless of load addition or removal. The 9100 series is Class 100 clean-room compatible, with Class 10 available as an option. *Kinetic Systems Inc., 20 Arboretum Road, Boston, Massachusetts 02131, <http://www.kineticsystems.com>*

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Compact Stroboscope

Monarch Instrument has introduced the Palm Strobe, a lightweight, compact xenon stroboscope used to determine the speed and phase relationships involved in machinery balancing and vibration analysis. It can also be used to capture slow-motion phenomena such as bending moments at an object's critical speed or to provide a trigger for data collection. Based on the company's microprocessor-controlled crystal, the Palm Strobe has a four-quadrant pressure-sensitive joystick button that adjusts flash rate and a multiply or divide by two function; the button allows single-handed operation for fractional rpm tuning. The stroboscope has a range of 100–12 500 flashes per minute (FPM), each flash of 10 to 30-μs duration, a resolution of 0.1 FPM, and a flash rate accuracy of ±0.01% of reading. Modes of operation include internal, external TTL input, preset, locked-on, and tachometer (5–250 000 rpm). *Monarch Instrument, 15 Columbia Drive, Amherst, New Hampshire 03031, <http://www.monarchinstrument.com>*

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New Literature

Dynaload's new catalog features electronic loads from 100 W to 120 kW. They can operate at a fraction of a volt to as high as 1000 V and include loads that are water-cooled, multi-channel, and hot-swappable. *Dynaload Division of Transistor Devices Inc., 2 Emery Avenue, Randolph, New Jersey 07869, <http://www.tdipower.com>* ■

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