

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 DATA ACQUISITION

Two GS/s Sampling Rate Data Acquisition Cards

Acqiris has announced two new data acquisition cards (models DP210 and DC240) that offer sampling rates of 2 gigasamples per second (GS/s) and a 500 MHz analog bandwidth. Both digitizers provide input voltage ranges from 50 mV to 5 V full scale; 50 Ω and 1 M Ω coupling; variable offset; internal calibration that allows 1% voltage measurement; full input protection; and fast recovery from out-of-range signals. Precise timing measurements are made possible with a ± 2 ppm accuracy clock system and a trigger-time interpolator with 5 ps timing resolution. A sequential trigger mode that rearms in less than 500 ns enables the capture of high repetition rate, burst, or impulse-response signals. The DP210 is a single-channel digitizer, the DC240 a dual-channel unit. Both come with 256 kilopoints of memory (optional to 4 megapoints) and an external input for handling an external trigger, clock, or reference signal. *Acqiris LLC, P.O. Box 2203, 234 Cromwell Hill Road, Monroe, New York 10950*

►Circle number 181 on Reader Service Card

Nuclear Multichannel Analyzer Card

Trump-PCI from EG&G ORTEC is said to be the first nuclear multichannel analyzer (MCA) card that installs directly into the PCI bus of a personal computer. It is available in two kilo- and eight kilo-channel versions, both of which feature an 8 μ s fixed A/D conversion time. The A/D converter is a successive approximation type with sliding scale linearization. The card features full gating control for coincidence measurements, and a highly accurate live-time clock for operation at high count rates. The MCA has an integral nonlinearity of $\pm 0.025\%$ over the top 99%

of the dynamic range and a differential nonlinearity of better than 1% over the same range. The input accepts positive unipolar, positive gated integrator, or positive leading bipolar analog pulses in the 0 to 10 V range. The Trump-PCI is supplied with the latest version of the company's Maestro-32 MCA emulation software, which operates under Windows 95/98/NT in 32 bits. *EG&G ORTEC, 100 Midland Road, Oak Ridge, Tennessee 37830*

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Portable Data Acquisition System

Nicolet Technologies has introduced Vision, a portable data acquisition system that combines the functions of a digital audio tape recorder, an oscillograph, and an oscilloscope. Vision's universal amplifiers offer 500 V isolation with a 20 kHz analog bandwidth; there are adapters for thermocouple and 4–20 mA inputs. The 16-bit digitizers on every channel are said to provide a high dynamic range with no crosstalk or aggregate rate limit. The instrument records either to an internal 4-gigabyte hard disk or through interfaces such as a 100-megabyte Ethernet connection. Even with eight channels operating at 100 kilosamples per second (kS/s) each, recording time is 80 minutes; when recording 16 channels at 1 kS/s, recording time is more than three days. After data has been acquired, details can be viewed and measurements made with controls such as zoom, cursors, and a



Multichannel Analyzer World's Smallest 'Pocket MCA'



Size: 6.5" x 2.8" x 0.8"

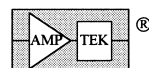
(165mm x 71mm x 20mm)

Weight: <300 grams (including batteries)

The **MCA8000A** is a full featured, low power Multichannel Analyzer intended to be used with a wide variety of detector systems.

- 16k data channels
- Stores up to 128 spectra
- 24 hours of continuous data acquisition from two 1.5V AA batteries
- Conversion time $\leq 5 \mu$ s ($\geq 200,000$ cps)
- Two stage input analog pipeline
- Differential nonlinearity $< \pm 0.6\%$
Integral nonlinearity $< \pm 0.02\%$
Sliding-scale linearization
- Two peak detection modes:
First peak after threshold (nuclear spectroscopy)
Absolute peak after the threshold (aerosol particle detection)
- Two TTL compatible gates for coincidence & anticoincidence
- Stand-alone data acquisition
- Date-time stamp - Y2K Compliant
- Stored spectra protection via software security & serial ID number
- 115.2 kbps serial interface

Free Windows & DOS software



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6 De Angelo Drive, Bedford, MA 01730-2204 U.S.A.

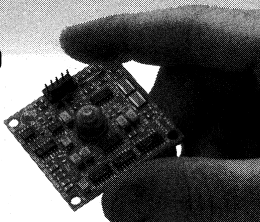
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jog/shuttle knob. A sound channel records user comments, and eight digital inputs can record status bits and frequency. *Nicolet Technologies, 5225-4 Verona Road, Madison, Wisconsin 53711*

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Data Acquisition Processor Boards

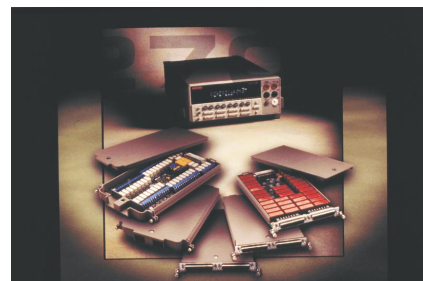
Microstar Laboratories has announced the iDSC 1816, a new data acquisition processor board with 16-bit resolution and 1.2 megasamples per second throughput for Windows NT/98/95 systems. The new board applies first-stage analog filters to each of its eight simultaneous inputs, followed by digital filtering on two digital signal processing chips; this provides 96 dB (16th bit) stopband rejection within one quarter-octave. Performance like this is said to be important in sonar and other spectral analysis applications.

The iDSC 1816 enables expansion to 112 simultaneous channels in one PC. The board can be controlled with a graphical interface (provided by the company's DSCview software) either locally or across a network. The onboard 32-bit operating system controls real-time filtering under the direction of industry standard PC software, and is said to be free from PC-related and network-related delays. *Microstar Laboratories Inc, 2265 116th Avenue N.E., Bellevue, Washington 98004*

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Multimeter/Data Acquisition System

Keithley Instruments' Integra series model 2700 digital multimeter (DMM) provides, in a half-rack size, the functionality and high-channel count of a data logger with the accuracy, convenience, and traceability of a true 6 1/2-digit (22-bit) DMM. It can handle up to 80 channels of measurement and control in applications ranging from product development to



process monitoring and production testing. Built-in mainframe signal conditioning can handle inputs up to 1000 V (300 V with plug-in modules). Two card slots accept a variety of input modules, enabling the user to vary channel count from 20 to 80; apply a stimulus to devices under test; route signals; control system components; and make measurements with 13 different test functions. The model 2700 features programmable scan lists, a 50 kilopoint memory buffer, built-in scaling, and digital input/output. Communication with a PC can be through a GPIB or RS-232 interface. The company's ActiveX-based software enables configuration and operation of the multimeter, and data analysis. *Keithley Instruments Inc, 28775 Aurora Road, Cleveland, Ohio 44139*

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PCI Data Acquisition Board

The plug-in DAQBoard/2000 from IOTech features a 16-bit, 200 kHz A/D converter and 16 single-ended or 8 differential analog inputs. The board has 13 software programmable ranges from ± 156 mV to ± 10 V full scale. Every range on the board is digitally calibrated. The boards include 40 digital input/output lines, dual 16-bit, 100 kHz D/A converters, four counters, and two timers. One 100-pin connector provides access to all of the input and output signals through a single PCI slot. An onboard scan sequencer can select 512 analog input channel/range combinations, as well as digital and counter inputs; the scanning is done at the rate of 5 μ s per channel. The company's optional DaqView2000 software allows graphical display, recording to disk, and reviewing and analyzing of data; an add-in for Microsoft Excel is also included. *IOTech Inc, 25971 Cannon Road, Cleveland, Ohio 44146*

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Direct-to-Sensor Data Acquisition

CyberResearch's CyMOD modules can be connected directly to a wide variety of sensors and perform all signal conditioning, linearization, scaling, and conversion functions independently. They can measure temperature, pressure, flow, voltage, current, and a wide spectrum of digital signals, and some modules can be configured to handle different combi-

nations and types of signals. The user may choose to use different modules for different tasks, or to use a single model of a multifunction module to handle the measurement needs of a whole plant. Modules automatically convert incoming analog signals to engineering units and transmit them to any host computer through an RS-232 serial port. The CyMOD family's RS-232 to RS-485 converter module can translate RS-232 signals into fully isolated RS-485 signals while protecting against potentially damaging voltage spikes. CyMOD modules can handle data transfers at speeds up to 38.4 kilobytes per second, and as many as 128 modules can be networked on a single system (up to 256 modules with a repeater). *Cyber-Research Inc, 25 Business Park Drive, Branford, Connecticut 06405*

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A/D and Oscilloscope PCI Bus Card

Gage Applied Sciences has introduced the CompuScope 1602, a single-slot 16-bit A/D and oscilloscope card for the PCI bus of a personal computer. Capable of dual-channel, simultaneous conversion rates of up to 2.5 megasamples per second, the card offers a 75 dB signal-to-noise ratio and an autocalibration feature, ensuring precise conversion of analog signals irrespective of ambient temperature. Its differential inputs provide a common mode rejection ratio of over 80 dB. When operating in memory mode, the card can record up to 8 megasamples in its acquisition memory; in real-time mode, it can stream up to two gigabytes of data to a host memory. The multiple record mode allows stacking of data from successive triggers, with the data stored only around the trigger event. When used with the company's GageScope for Windows software, the CompuScope 1602 allows users to view, manipulate, store, analyze, and print data, and to convert it to ASCII format for use in spreadsheets and mathematical software. *Gage Applied Sciences Inc, 1233 Shelburne Road, Suite 400, South Burlington, Vermont 05403*

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Isolated Data Acquisition Boards and Modules

National Instruments' PCI-6527 and PXI-6527 boards provide 24 optically



isolated 0–24 VDC inputs and 24 0–60 VDC solid-state relay outputs. The boards feature high current drive, interrupt-on-change, digital filtering, and protective current-limiting circuitry.

The company has also issued nine new dual-channel signal conditioning component (SCC) modules, which provide isolated analog input with attenuation and amplification. The modules protect a computer from noise and spikes on external signals, break ground loops, and allow higher output ranges (required by some applications). The modules are said to enable accurate measurements even in the presence of high common-mode voltages (up to 300 V). The boards and modules are designed to work with the company's software, including LabVIEW and LabWindows. *National Instruments, 11500 North Mopac Expressway, Austin, Texas 78759-3504*

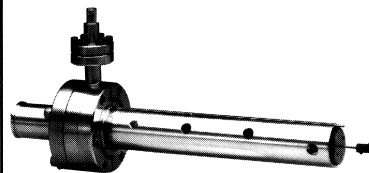
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Transducer Signal Conditioner/Indicator

The model SC300 from Sensotec is a self-calibrating microprocessor-based transducer signal conditioner and 16-character, six-digit display with 1–14 input channels. A signature calibration option enables the unit to automatically calibrate itself to the proper zero, span, linearity, decimal point, and engineering units for each of the company's signature calibrated transducers. The transducer output-versus-load characteristics, including linearity corrections, are stored in the SC300. Other features include a menu-driven setup interface using the unit's front panel controls, an RS-232/485 interface, mathematics capability, analog and digital peak detection, and up to eight limits. *Sensotec Inc, 2080 Arlingate Lane, Columbus, Ohio 43228*

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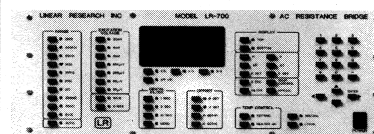
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