

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

24-Bit A/D System

Featuring eight independent, 24-bit analog-to-digital (A/D) converters, the PAR24B data acquisition system from Symmetric Research achieves 22-bit true single sample accuracy at a 20 Hz sampling rate. Even at the maximum sampling rate of 1 kHz, we are told there are no crosstalk or settling problems, which often occur in multiplexed systems. The standard bidirectional personal computer (PC) parallel ports make the system useful for laptop or desktop machines. Programmable gain input amplifiers in the A/D converters can be set by software or by jumper-selectable input resistor dividers. All eight channels have differential inputs for maximum noise rejection.

Once converted, incoming digitized data is fully buffered with an on-board first-in, first-out (FIFO), allowing continuous data acquisition even during heavy interrupts or multitasking. *Symmetric Research, 15 Central Way, Suite 9, Kirkland, Washington 98033*
►Circle number 181 on Reader Service Card

USB Serial Adapter

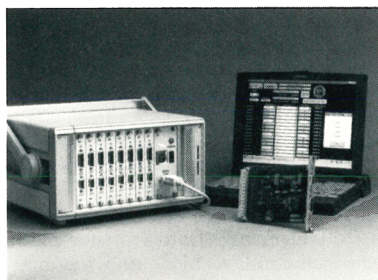
The universal serial bus (USB) is on its way to replacing standard serial and parallel ports. Among the relatively small number of USB peripherals now available is Quatech's DSU-100, a two-channel asynchronous serial USB adapter that provides two independent high-speed RS-232 ports and is fully compatible with USB specification 1.1. The adapter is designed to support standard serial devices, including modems, printers, scanners, barcode readers, touch screens, plotters and integrated services digital network (ISDN) terminal adapters. Capable of data rates of up to 460.8 kilobaud, the DSU-100 can be used with application software designed for traditional serial adapters. The adapter is bus-powered, so no external power supply is needed. *Quatech Inc, 662 Wolf Ledges Parkway, Akron, Ohio 44311*

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Signal Conditioning System Module

Alligator Technologies has announced the SCS-812, an eight-channel amplifier and low-pass filter module with cutoff frequencies from 1 Hz to 100 kHz for the company's SCS-800 signal conditioning system. The new device features individual channel gain and corner frequency selectability, AC/DC module input coupling and input cable shield drive. It also provides enhanced analog-to-digital (A/D) range resolution (made possible by a unipolar to bipolar signal feature) and reduced offset (0.02 mV referred to the input at high gain). A proprietary DC transformer circuit provides true differential outputs so that common-mode noise will not affect the signal at the receiving end.

The SCS-800 base system can be used with eight SCS-812 modules, providing up to 64 channels of signal con-



ditioning in a portable self-contained unit. *Alligator Technologies, 2900 Bristol Street, Suite E-101, Costa Mesa, California 92626*

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Data Acquisition Processing Board

Microstar Laboratories has announced a 14-bit data acquisition processor board for Windows 95, 98 and NT systems that have to process results in real time. The DAP 4200a/526 combines the latest 14-bit analog-to-digital (A/D) conversion technology and the

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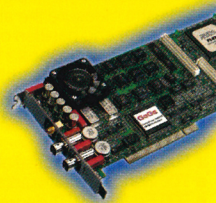
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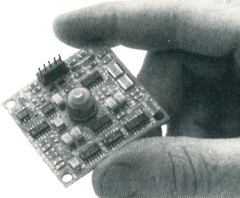
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RESISTANCE THERMOMETRY WITH AVS-47



You can now order your resistance bridge and the GPIB option with the new **optical fibre Picolink**, which is the best solution against ground loops and EMI. A free **LabView Driver** helps you to integrate the AVS-47/TS-530A into a GPIB-based system.

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latest peripheral component interconnect (PCI) techniques with hardware and software from the company's 12-bit DAP 3200a models. The DAPlog Plus software continuously logs acquired data to disk at a rate of 1.25 million words per second equivalent to 2.5 megabytes per second. Each word can hold either a single 14-bit sample from an analog channel, or 1–16 single-bit samples from digital channels. When used with DAPlog Plus, or with another Windows-compatible program, the DAP 4200a/526 dynamically buffers data acquired at its maximum rate for up to 5 seconds in onboard random access memory (RAM). This feature is said to protect the application program from random operating system and network delays. *Microstar Laboratories, 2265 116th Avenue Northeast, Bellevue, Washington 98004*

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16-Bit 50 kHz A/D Board for PCI Bus

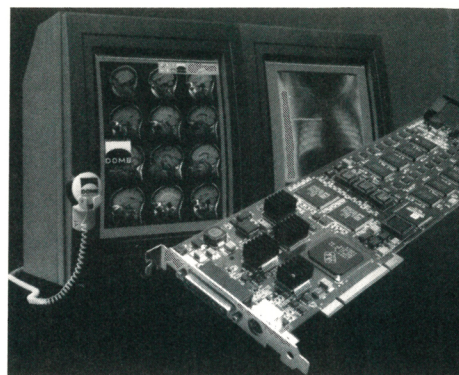
The PD-MF-16-50/16x is an analog-to-digital (A/D) board for the PCI bus from United Electronic Industries. Based on the company's PowerDAQ technology, it comes in two models with a processor-based Motorola 56301 peripheral component interconnect (PCI) digital signal processor (DSP) interface. The boards allow the user to offload the data acquisition functions of the host central processor unit (CPU) to the DSP, thus giving the user two CPUs in one personal computer (PC). The 50 kHz 16-bit, 16-channel board comprises four subsystems: analog input, analog output, digital input-output (I/O) and three 8254-type counter/timers.

PowerDAQ technology allows all the subsystems to run simultaneously and/or independently with one or more boards in the same PC. The boards feature extensive hardware and software triggering. Data transfer methods include slave mode and bus mastering operation. *United Electronic Industries Inc, 10 Dexter Avenue, Watertown, Massachusetts 02472*

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5-Megapixel Display Controller

DOMÉ imaging systems has introduced what is said to be the first 5-megapixel display controller capable of supporting two monitors from a single peripheral component interconnect (PCI) card. The DOMÉ Md5/PCX imaging board thus reduces the cost of a dual-monitor configuration, which is often needed to view before and after



images simultaneously. The display controller is designed for grayscale diagnostic imaging applications, such as teleradiology systems and picture archiving and communications systems, where resolution, image quality and the ability to handle large images are essential. It can produce both landscape (2560 × 2048 pixels) and portrait (2048 × 2560 pixels) displays. The latter is the aspect ratio most similar to that of traditional x-ray film monitors. The controller allows very fast access to image data, an important feature in medical applications where large images must be downloaded quickly to maintain interactive viewing. *DOMÉ imaging systems inc, 400 Fifth Avenue, Waltham, Massachusetts 02154*

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Plug-In Data Acquisition Card

The CPCI-16-4B card from Analogic works with the company's CompactPC system, and is designed for frequency domain applications where spectral purity is critical. The card features four 16-bit, 200 kHz simultaneously sampled analog-to-digital (A/D) converters, each providing a spurious-free dynamic range of greater than 90 dB and a signal-to-noise ratio of 86 dB. The throughput rate is 800 kHz when each converter, supporting a single differential input and a fixed bipolar range of ± 5 volts, operates at its maximum 200 kHz sampling rate.

The CPCI-16-4B can operate in any one of four acquisition modes, including sequential and burst. Acquisition duration can be controlled by an event, time or fixed number of samples. The card's on-board precision reference, dedicated digital-to-analog (D/A) converters and memory are used collectively to perform automatic calibration. *Analogic Corp, Data Conversion Products Group, 360 Audubon Road, Wakefield, Massachusetts 01880*

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Flexible Resolution Digitizer

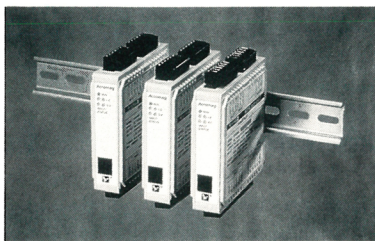
National Instruments has unveiled the NI 5911 plug-in digitizer, which incorporates the company's Flex ADC technology, said to provide the lowest noise and highest dynamic range (160 dB below full scale) of any computer-based digitizer available. Flex ADC can sample anywhere in the range of 100 MHz with 8 bits of resolution to 100 kHz at 21 bits, offering variable resolution over a wide sampling range. When the digitizer is used with the company's software, numerous computer-based instruments can be built, including a deep memory digitizer; a 100 MHz, 8-bit oscilloscope; a 50 MHz spectrum analyzer; a frequency counter; and an AC/DC voltmeter.

The 5911 is useful in automated measurement applications, because it uses the peripheral component interconnect (PCI) bus to transfer data at rates of up to 132 megabytes per second. It comes with ready-to-run oscilloscope software and an instrument driver that is compliant with the interchangeable virtual instrument (IVI) protocol. *National Instruments, 11500 North Mopac Expressway, Austin, Texas 78759-3504*

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Signal Conditioning Computing Module

Acromag's new IntelliPack math modules contain an intelligent microprocessor that simplifies setup, supports programmable input-output (I/O) ranges and performs advanced signal processing functions. Dual and quad



input models enable summing, averaging and other relational calculations. All I/O ranges can be configured using the software for a variety of DC currents and voltages. Math functions include addition, subtraction, multiplication, division, square root, exponents, logarithms, sine/cosine/tangent, absolute value, scaling, minimum/maximum signal selection and track and hold. Equations of up to 150 characters are entered using the software. The software provides a simu-

lation function for visualizing possible input/output interactions before actual installation. Three-way isolation is said to eliminate ground loops and protect against noisy transient signals. *Acromag Inc, 30765 South Wixom Road, P.O. Box 437, Wixom, Michigan 48393-7037*

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USB-Based Data Acquisition System

DATAQ Instruments has introduced the DI-700, a universal serial bus (USB)-compatible, portable data acquisition system. Each of the DI-700's 16 analog input channels can be programmed, providing channel-by-channel software selection of sample rate, gain and signal averaging. In addition, each channel can measure ± 10 volts over four gain ranges, and can be set for single-ended or differential operation. Sample rates of up to 1000 per second are supported, with 16-bit measurement resolution. The company's WinDaq software, for recording, playback and analysis of data, is supplied with the system, which also includes eight programmable digital input lines and eight programmable digital output lines. *DATAQ Instruments Inc, 150 Springside Drive, Suite B220, Akron, Ohio 44333*

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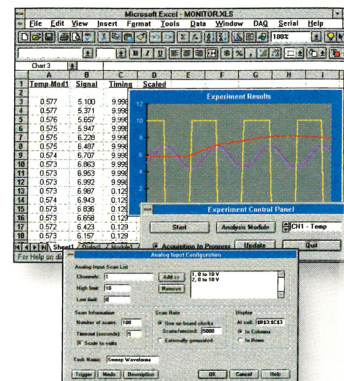
Digitizer for Transient or Continuous Recording

Nicolet has announced the OD-200 acquisition card, a new addition to the company's Odyssey line. The card features four independent channels with 14-bit analog-to-digital (A/D) converters, 10 megasamples per second per channel transient capture, with up to 8 megasamples per channel transient memory and 5 MHz differential amplifiers with selectable anti-aliasing filters. The OD-200 can store directly to disk at an aggregate rate of up to 1 megasample per second for over half an hour.

The OD-200 can provide a fast oscilloscope-like display in Y-T, X-Y or fast Fourier transform (FFT) mode and review the data while recording. The Odyssey mainframe can accept up to four cards and includes Windows-based operating software. *Nicolet Technologies Inc, 5225-4 Verona Road, Madison, Wisconsin 53711*

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