

# 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

### Modular Data Acquisition and Storage System

Heim Data Systems has introduced the DiSC6, a high-bandwidth front end for online PC data acquisition. The DiSC6 can also operate as an instrumentation data recorder using optional tape, disk, or solid-state drivers. The new modular system combines the technical features of the company's A480 recorder with the small size of a mobile front end. With six signal-module slots in the main-frame and an optional extension to 12, the DiSC6 provides user-configured signal conditioning modules for multiple sensors. It offers up to 72 synchronously sampled channels per

system; multiple systems can be time and sample synchronized. The total system bandwidth is 640 kHz, with channel bandwidth from 150 Hz to 200 kHz, adjustable on a per module basis. A time-code generator/reader with GPS time synchronization is included. *Heim Data Systems Inc., P.O. Box N, Belmar, New Jersey 07719, <http://www.heimdata.com>*

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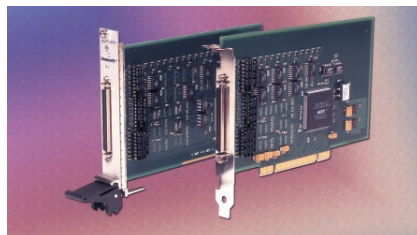
### Counter/Timer Boards

Acromag's new counter/timer I/O boards, the APC48x for desktop PCI and AcPC48x for CompactPCI, come in several models with up to 10 channels for quadrature, counter, and timer. The 482 models feature ten 16-bit counters with a TTL interface; the 483s combine four 16-bit counters and

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### IEEE 488.1 Bus (GPIB) Upgraded

The Institute of Electrical and Electronics Engineers, through its Standards Association (IEEE-SA), has upgraded its IEEE 488.1 standard so that IEEE 488 buses can transfer data at speeds as high as 8 megabytes per second, up from 1 MB/s. The increased throughput rests on the use of two-wire handshaking—instead of three-wire—and packed data streaming. The revised standard, IEEE 488.1-2003, "Standard for Higher Performance Protocol for the Standard Digital Interface for Programmable Instrumentation," addresses the operation of the IEEE 488 bus or General Purpose Interface Bus (GPIB), which has been in use for more than 25 years and is built into millions of instruments worldwide. In complying with the new standard, instrument makers do not have to make hardware or panel-labeling changes because the high-speed capability is optional. To support the new transfer protocol, manufacturers need only add a controller IC to their design.



four 32-bit RS 422 counters; and the 484 models provide six 32-bit RS 422 counters. For more flexibility, two 16-bit counters can be combined to form one 32-bit counter. Most of the configuration settings are handled by a single register. Counter/timer modes include event counting; quadrature position measurement; frequency and period/pulse-width measurement; square-wave, pulse-train, and pulse-width generation; and a time-period interrupter. Counters can use internal or external clocks. *Acromag Inc., 30765 South Wixom Road, P.O. Box 437, Wixom, Michigan 48393-7037, <http://www.acromag.com>*

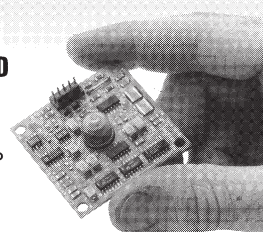
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### USB-Based Data Acquisition Module

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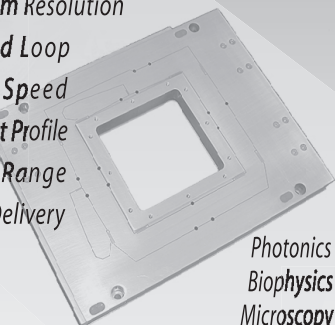
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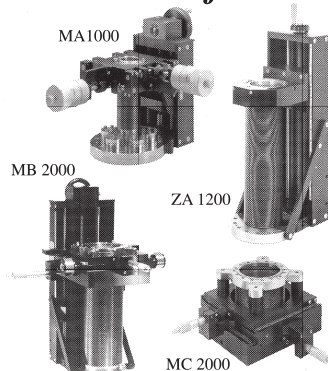
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ment Device brand PC-based analog and digital I/O that provides a plug-and-play interface to the USB 1.1 or 2.0 port on notebook, desktop, or rack mount PCs. It features 8 single-ended or four differential analog inputs with 12-bit resolution, at sample rates up to 1.2 kilosamples per second (8 kS/s for up to 4000 samples); it also has eight software-selectable input ranges. In addition to the analog inputs, the unit offers two channels of 10-bit analog output, one 32-bit counter, and 16 bits of digital I/O. The PMD-1208LS obtains all required power from the USB port, and includes an external trigger input, a user-configurable watchdog timer, and free application software with source code and drivers. *Measurement Computing Corp, 16 Commerce Boulevard, Middleboro, Massachusetts 02346, http://www.measurementcomputing.com*

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## Timing Sequencer Boards

United Electronic Industries has announced the PD2/PDXI-DIO-64TS Timing Sequencer boards, available in both the PCI and PXI formats, that generate a virtually unlimited series of user-defined pulses or digital words at high speed. The width of each pulse or word can be set from 1  $\mu$ s to 16 776 s with 20-ns precision. The user creates a series of commands, each defining a precise time interval and the digital pattern to be generated during that interval. The commands are stored in a time sequence (TS) list that resides in onboard buffer memory. When one or more of the four digital I/O ports has been enabled, an entry in the TS list defines the levels of the output lines and how long they should retain those levels. The number of entries in the TS list can vary from 256 to an option with 8192. *United Electronic Industries Inc, 611 Neponset Street, Canton, Massachusetts 02021, http://www.ueidaq.com*

Circle number 184 on Reader Service Card

## Expandable Mobile Workstations

CyberResearch has developed new LPA and LPV mobile PCs that provide the power of a PC workstation in a compact, portable carrying case. They feature a 15-inch LCD flat-panel display with 1024  $\times$  768 pixel resolution. The LPA models (see photo) have three 5.25-inch drive bays and two 3.5-inch bays; LPVs have two bays in each size.



Both models offer a choice of 5-PCI slots or 3-PCI and 3-ISA slots along with a slot for an advanced graphics port (AGP). Both LPA and LPV are available with a choice of two, three, or four gigabytes of random access memory, a 2-GHz Celeron CPU, a 2.4-GHz Pentium P4 CPU, a 3.2-GHz P4 CPU, or an Athlon CPU. Models with Athlon CPUs come with an AGP video card, but the other models use a shared video RAM on the motherboard to provide video. *CyberResearch Inc, 25 Business Park Drive, Branford, Connecticut 06405, http://www.cyberresearch.com*

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## VXI Data Recording Module

Spectral Dynamics has introduced the VX2805, an eight-channel data-recording VXI module. Each channel includes a bridge signal conditioner, a low-pass filter, a 16-bit A/D converter operating at up to 5 megasamples/s per channel, and 16 MS of DRAM storage per channel. The signal conditioning is suitable for strain gauge bridge-type transducers and for voltage signals. A computer calibration routine can perform an end-to-end calibration of each channel (including the transducer). The VX2805 features 2.3-MHz bandwidth, simultaneous sampling, dual-port memory access, buffered analog output for each channel, multievent recording, dual-clock-rate data recording, and excellent channel-to-channel phase match. *Spectral Dynamics Inc, Advanced Research Products, 1010 Timothy Drive, San Jose, California 95133, http://www.spectraldynamics.com*

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## Data Acquisition/Playback Card

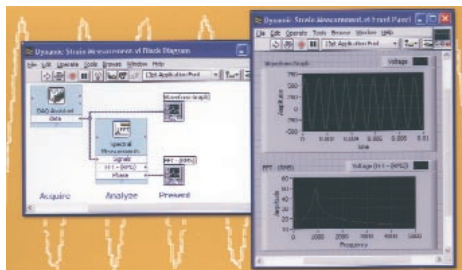
Innovative Integration's Oruga is a PCI data acquisition and playback card featuring a front end of 64 analog input channels with 16-bit resolution at 39 kilosamples/s each and individ-

ual anti-aliasing filters. The Oruga also provides 64-bit digital I/O, distributed in two 32-bit ports, and four optional D/A 16-bit output channels, at up to two MS/s, that are capable of waveform generation, playback, or closed-loop control. Simultaneous four-channel playback can sustain 750 kS/s per channel; a wide selection of triggering modes and clock sources is also offered. Oruga is powered by a C6713 digital signal processor clocked at 150 MHz (Texas Instruments' fastest 32-bit floating-point digital signal processor), which assures the control of all peripherals and offers ample math coprocessing bandwidth. *Innovative Integration, 2655 Park Center Drive, Simi Valley, California 93065, <http://www.innovative-dsp.com>*

Circle number 187 on Reader Service Card

## Data Acquisition Software

National Instruments has released its NI-DAQ 7 software, which, together with the company's LabVIEW 7 Express, can enable speed increases from 100 to 1000 times when using multiple device functions or multiple



devices simultaneously. NI-DAQ 7 maximizes I/O system throughput with a multithreaded driver engine to independently control each device function such as analog input, digital I/O, and counter/timer. It also improves single-point analog acquisition speed by up to 20 times compared to earlier versions. Other driver engine improvements include automatic clock and trigger routing to simplify synchronization, pinpoint error diagnostics in every software component, and the ability to use previous NI-DAQ driver versions on the same computer with NI-DAQ 7. *National Instruments Corp, 11500 North Mopac Expressway, Austin, Texas 78759-3504, <http://www.ni.com>*

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## Transducer Calibration Accessory

IOtech has introduced new data acquisition equipment capable of

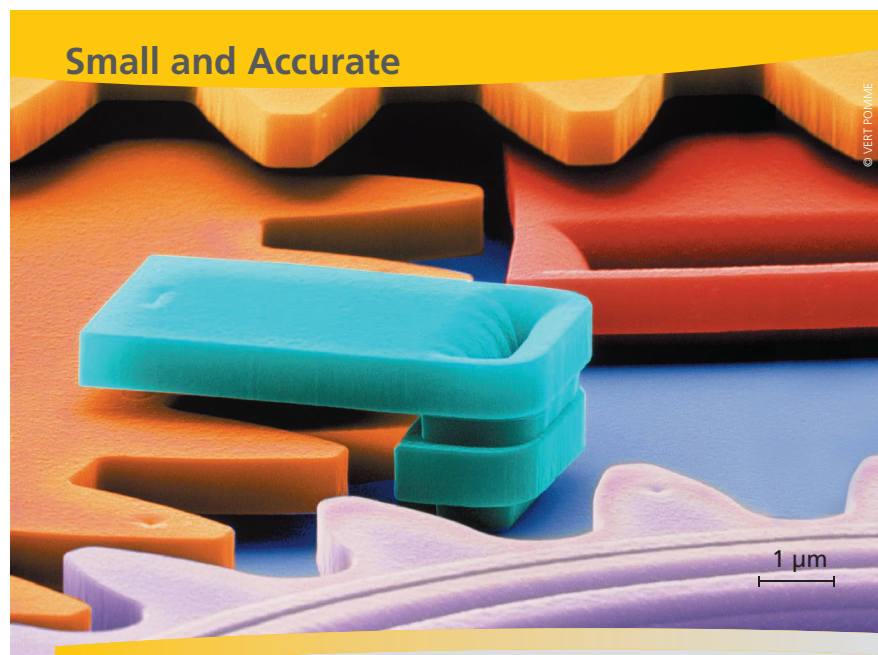
reading the calibration information stored in a transducer. TEDS (transducer electronic data sheet) is also known as IEEE 1451.4, the standard that defines the protocol for how calibration information is stored and retrieved within sensors. The company's WaveView software, included with its WaveBook and WBK18 products, supports the standard templates for piezoelectric accelerometers and microphones. Each channel that is connected to a TEDS-capable device can enable scaling on a per-channel basis. This allows the mixing of both TEDS-capable and non-

TEDS-capable transducers in the same system, and allows the use of TEDS-capable accelerometers from different manufacturers in the same system. *IOtech Inc, 25971 Cannon Road, Cleveland, Ohio 44146, <http://www.iotech.com>*

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## Low-Pass Filter Module

Alligator Technologies has announced the AAF-2Fe, a two-channel, anti-aliasing low-pass filter module. Each



## New single-channel family of high-resolution PCI digitizer cards deliver top performance and measurement quality.

### DP310 provides unique tools for complex wideband analysis at 400 MS/s

The DP310 features a high-frequency input (HF In) with 300 MHz bandwidth, fine-tunable sampling rates of up to 400 MS/s (HRes SR) and acquisition memories of up to 4 Mpoints.

### DP308 and DP306 for cost-effective 12-bit measurements

The DP308 samples at up to 200 MS/s with 100 MHz bandwidth, while the DP306 samples up to 100 MS/s with 50 MHz of bandwidth. Both cards feature 32 kpoints of on-board memory, expandable up to 2 Mpoints.

12-bit



HRes SR



HF In



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module, a plug-in daughter board, has two channels of Butterworth, Bessel, Cauer, or linear phase filters, selectable to any corner frequency within the filter bandwidth range from 0.1 to 200 kHz. The output impedance is less than  $0.001 \Omega$  and common-mode rejection is 90 to 110 dB. The input and output ranges of the AAF-2Fe are up to  $\pm 10$  V, while gain accuracy is  $\pm 0.001$  dB at 1 kHz. When used with the company's AAF-2PCI and other filter boards, the AAF-2Fe has the superior signal integrity of analog measurements found in applications such as process control, sound and vibration testing, ultrasonics, and acoustics. *Alligator Technologies, 2183 Fairview Avenue, Suite 220, Costa Mesa, California 92627-5674, <http://www.alligatortech.com>*

Circle number 190 on Reader Service Card

## GPS Time Stamping

The PARGPS board from Symmetric Research provides 10- $\mu$ s accuracy, GPS-based time stamping for data acquired with the company's single-channel, two-channel, and four-channel 24-bit A/D systems. The PARGPS board features both time and location data on an ongoing real-time basis as analog data is acquired. Symmetric's data-acquisition systems use a dedicated A/D chip for each channel. That architecture minimizes cross talk and settling problems said to be commonly associated with multiplexed systems. The company's acquisition and display programs have been upgraded for GPS support. Each A/D system includes a 2-megabyte memory buffer to ensure no data loss during long PC or network latencies. Continuous acquisition rates are programmable from 0.1 to 5 kHz and stored on a hard disk. *Symmetric Research, 9805 N.E. 116th Street, #7407, Kirkland, Washington 98034, <http://www.symres.com>*

Circle number 191 on Reader Service Card

## Signal Analyzer Boards

Acqiris USA has released models AP240 and AP235, two new multi-functional, dual-channel, signal analyzer boards that enable two signals to be sampled and analyzed simultaneously with minimal phase error. Each channel of the AP240 includes a front end with 1-GHz bandwidth, a 1-gigasample/s A/D converter, and up to 1 megapoint of memory (4 Mp optional). The AP235 platform features a 500-MHz bandwidth and a sampling rate up to 500 MS/s on each channel.

For single-channel applications, both models can interleave their two channels and thereby double both the maximum sampling rate and the memory. The new boards can be supplied with a firmware averager option, which allows the platforms to perform real-time averaging signal processing on the acquired waveforms at a 1 GS/s sampling rate, synchronously on both channels. *Acqiris USA, P.O. Box 2203, 234 Cromwell Road, Monroe, New York 10950, <http://www.acqiris.com>*

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## Coaxial Switch Matrix

Cytec Corp is offering the TX series of video and RF switching systems, based on a solid-state fabric. The TX 128  $\times$  128 matrix furnishes both non-blocking (any input to any output) and full fan-out (any input to all outputs) switching of 50- and 75- $\Omega$  coaxial signals. For signal levels of up to 0.2 V peak-to-peak, the bandpass is 140 MHz; at levels up to 8 Vpp, the bandpass is 50 MHz. The system accepts up to eight input modules and eight output modules with 16 connections per module. It can be purchased as a 16  $\times$  16 matrix and subsequently expanded. Input and output buffers can also be included to switch a variety of characteristic impedance and output levels. Control options include RS 232, IEEE 488, LAN, or manual keypad. *Cytec Corp, 2555 Baird Road, Penfield, New York 14526, <http://www.cytec-ate.com>*

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## New Literature

Signal Recovery has published a new 132-page catalog that lists and describes products such as preamplifiers, lock-in amplifiers, boxcar and signal averagers, transient recorders, digital delay generators, multiplexers, and light choppers. *Signal Recovery, AMETEK Advanced Measurement Technology Inc, Astro House, Brants Bridge, Bracknell, Berks RG12 9HW, UK, <http://www.signalrecovery.com>*

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The new *Materials Product Guide* from Goodfellow Corp, with more than 48 000 items, provides an overview of the company's line of metals, alloys, polymers, ceramics, compounds, intermetallics, and composites. *Goodfellow Corp, 800 Lancaster Avenue, Berwyn, Pennsylvania 19312-1780, <http://www.goodfellow.com>*

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