Focus on software and semiconductors

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. For more information about a particular product, visit the website at the end of the product description.

Andreas Mandelis

PC-based oscilloscope analysis

Agilent Technologies has introduced N8900A InfiniiView. The PC-based oscilloscope analysis software allows users to view and analyze signals previously captured from oscilloscopes made by Agilent and other vendors. Using a target system and an oscilloscope simultaneously can cause debugging and testing bottlenecks. InfiniiView addresses that issue by allowing users to view, analyze, share, and document results at a different time or place from where tests are performed. To create documentation faster, InfiniiView incorporates bookmarks and smart markers—features not previously found in oscilloscope user interfaces. The software offers display resolution of up to 1680 × 1200 pixels for waveform viewing with large monitors and separate dockable windows with time, frequency, and protocol measurements for user-customizable views. For faster debugging of designs that include serial buses, the N8900A supports several protocol decodes, including I2C, serial peripheral interface, RS-232, and 64B/66B Ethernet. *Agilent Technologies Inc, 5301 Stevens Creek Boulevard, Santa Clara, CA 95051, http://www.agilent.com*

High-speed data acquisition module

Data Translation has added to its series of high-speed simultaneous USB data acquisition modules. The DT9862S offers a bandwidth of 300 MHz with crystal-controlled sampling for precise, low-jitter applications. An external clock input enables users to lock the undersampling to a multiple of the signal waveform being tested. Sonar and satellite surveillance are two RF communication applications for which undersampling is required for high-quality measurements. The DT9862S offers two 16-bit simultaneous analog channels, two optional analog outputs, 32 digital input–output lines, two counter/timers, three quadrature decoders, and ±500-V galvanic isolation. A full range of software options—such as drivers compatible with Windows XP, Vista, and 7—is included at no charge. The module is available installed in a metal connection box with subminiature version A connectors or as a board-level OEM version. *Data Translation Inc, 100 Locke Drive, Marlboro, MA 01752-1192, http://www.datatranslation.com*

Automation controller software

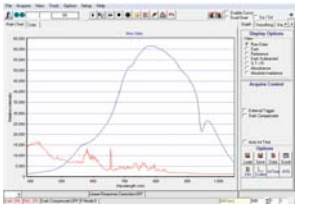
Aerotech has made available a motion-control industrial computer option for its Automation 3200 multiaxis machine controller. The A3200 is used in many applications in the semiconductor, data storage, medical laser processing, automotive, and machine tool industries. The system features a high-performance, software-only motion controller that offers 32 axes of synchronized motion control. Its front and top connections simplify installation with panel-mount devices, while the compact 183 × 183 × 70 mm enclosure saves space. Designed for demanding environments, the A3200 includes active cooling, full functionality on a single printed circuit board, an optional solid-state drive, and advanced motherboard watchdog technology. The mounting feet can be rotated to maximize panel space. Standard features include a 2.0-GHz processor, 2 GB of DDR2 RAM, a 160-GB serial ATA hard drive or solid-state drive, a 12-V_{dc} or 120-V_{ac} power adapter, audio, integrated graphics, and dual Ethernet. A Windows XP Pro or Windows 7 operating system is standard. *Aerotech Inc, 101 Zeta Drive, Pittsburgh, PA 15238-2897, http://www.aerotech.com*

Multitone RF test system

AR RF/Microwave Instrumentation claims its new multitone RF test system reduces radiated immunity testing from days to hours. The new Multi-star system, model MT06000 (80 MHz–6 GHz), has most of the instruments needed to perform radiated immunity testing per the IEC 61000-4-3 standard; not included are the required amplifiers, antennas, and directional couplers. By testing multiple frequencies simultaneously, users can maximize their efforts during dwell time to increase testing speed. The Multi-star system can test up to 10 frequencies at once, which makes it possible to conduct RF immunity testing 10 times as fast as previously possible. The multitone software includes automated routines for field calibration and maximizing test speed, while still maintaining the linearity and harmonic requirements of the IEC standard. The MT06000 is available as either a self-contained system or an automated test system that is integrated with amplifiers and accessories. *AR RF/Microwave Instrumentation, 160 School House Road, Souderton, PA 18964-9990, http://www.arworld.us*

Spectral data acquisition software

B&W Tek has updated its spectral data acquisition software. The BWSpec version 4.00 features a new spectral management system that allows users to more intuitively work with multiple spectra simultaneously. The menu on the Spectrum List Panel lets users select, deselect, save, and load overlapping spectra at the same time. BWSpec software has multiple data formats and can optimize scanning parameters such as integration time and laser output power control. Among



its features are data acquisition, data processing, automatic dark removal, spectrum smoothing, and manual and auto baseline correction. BWSpec is compatible with all current Windows operating systems, including both 32- and 64-bit software architectures. It is included with the purchase of all B&W Tek spectrometer products. *B&W Tek Inc, 19 Shea Way, Newark, DE 19713, http://www.bwtek.com*

Geospatial imagery-based software

Exelis has created ENVI 5, image analysis software that makes it easier to solve problems using geospatial imagery. The new release features a streamlined user interface, a high-speed display, new and advanced processing tools, and a flexible application programming interface for easy customization. Since all ENVI tools are accessible from the Esri ArcGIS toolbox, geographic information system users can easily add information to their GIS workflow for enhanced mapping applications. The software can process and analyze large data sets by rapidly visualizing, navigating, and enhancing data with high-speed raster and vector display. Vector data can be displayed based on software that increases user visualization control. Image stretching is accomplished without the delay of calculating image statistics. The input stretch parameters can be defined based on the full scene or view extent to enhance the display according to user-specific needs. *Exelis Visual Information Solutions, 4990 Pearl East Circle, Boulder, CO 80301, http://www.exelisvis.com*

Application programming interface

With its version 9.1 upgrade, Integrated Engineering Software has introduced an application programming interface across its simulation software suite. The Integrated API enables smart automation scripting and provides an intuitive method of controlling the interface that supplements the existing interactive, parametric, and batch modes. It allows users direct access to the internal workings of each software program in the suite and enables them to write new analysis applications to meet their specific needs. Through the new API, users can seamlessly connect their own applications to Integrated software programs without either application requiring prior knowledge of the inner workings of the other. *Integrated Engineering Software, 220-1821 Wellington Avenue, Winnipeg, Manitoba, R3H 0G4, Canada, http://www.integratedsoft.com*

Matlab and Simulink software

MathWorks has announced R2012a of its Matlab and Simulink product families. It introduces a hardware description language coder, which generates HDL code from either Matlab or Simulink for prototyping and implementing field-programmable gate arrays or application-specific integrated circuits. The HDL verifier replaces the EDA simulator link and adds Altera FPGA hardware-in-the-loop support. The new release also updates 77 other products, including Polyspace embedded software verification products. For Matlab, R2012a highlights include unified functions for 1D, 2D, and 3D numerical integration and improved performance of basic math and interpolation functions; Matlab compiler runtime available for download to simplify distribution of compiled applications and components; and the image processing toolbox for automatic image registration using intensity metric optimization. Among the highlights for Simulink are the ability to run models directly from Simulink on target hardware, including LEGO Mindstorms NXT and BeagleBoard; and an embedded coder that is compatible with Autosar 4.0, reduces data copies, and links code-generation reports with Simulink Web views. *The Mathworks Inc, 3 Apple Hill Drive, Natick, MA 01760-2098, http://www.mathworks.com*

Lens design software

Lambda Research has released its OSLO lens design software version 6.6. Fully compatible with Windows 7, the software has several new capabilities and program enhancements. They include the Standard for the Exchange of Product model data file export, TOPS merit functions, NotePad++ editor, a user-selectable private folder, Q-type asphere improvement (premium edition only), and an updated help system. The release also includes updated glass

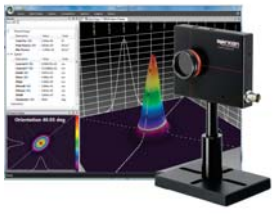
and vendor lens catalogs. One version—tops—will only work with the standard and premium editions of OSLO, but a simpler one—tops_edu—will work with OSLO EDU and OSLO Light. Both will generate an error function that can be used "off the shelf" to rapidly improve many types of rotationally symmetric lenses or can be tailored to finalize the design by adjusting weights and targets. A free OSLO EDU edition and the new OSLO user guide can be downloaded from www.lambdares.com/education/oslo_edu. A free 30-day OSLO premium trial can be requested at www.lambdares.com/trials. *Lambda Research Corporation, 25 Porter Road, Littleton, MA 01460, http://www.lambdares.com*

Software for power monitoring

National Instruments has introduced the LabVIEW Electrical Power Suite, a new toolkit specifically for the power industry. Users can combine the company's CompactRIO system for power measurement with more than 50 signal and sensor modules. The power suite and CompactRIO provide users with a fully programmable, modular, field-upgradable set of tools that feature industry-standard power analysis for graphical system design. It also allows for full, streaming access to raw, time-based waveform data: Users can implement diagnostic algorithms that may be unique to a local power service. The software incorporates ready-to-run example programs that can integrate power analysis functions such as energy, frequency, voltage unbalance, and event detection into a full test or monitoring system. *National Instruments Corporation, 11500 North Mopac Expressway, Austin, TX 78759-3504, http://www.ni.com*

Laser-beam analysis software

BeamGage version 5.7 laser-beam analysis software from Ophir-Spiricon, a Newport Corp brand, has new image processing features, including fast, off-axis correction of distorted beam images. It supports the company's laser power meters—Pulsar, Nova II, Vega, and Juno—as well as 64-bit versions of Windows Vista and 7. BeamGage is now a multilingual platform; it has native language support for English, Japanese, and Chinese and is compatible with the German Microsoft Windows environments. The software provides a way to quickly detect and correct the skew of an image when the camera angle is offset from the line of sight of the laser beam it is measuring. Based on a sophisticated image compression algorithm, BeamGage can correct off-axis beam images that are angled up to 45° from the laser's perpendicular line. That provides additional flexibility, which is especially needed for applications set up in restrictive spaces. *Ophir-Spiricon LLC, 3050 North 300 West, North Logan, UT 84341, http://www.ophiropt.com*



Customized 3D model and image software

Golden Software has released Voxler 3, a scientific 3D data visualization and graphics application. It enables users to quickly and easily import data in a multitude of file types and create high-quality graphics to explore the relationships between 3D data sets. Data can be displayed in various colors, views, and 3D formats: 3D rendered volumes, isosurfaces, straight and deviated well bores, 3D block models, contours, 3D slices, orthographic and oblique images, scatter plots, stream lines, and vector plots, among other functions. Users can render and display straight and deviated well bores, render from and to data and log data along the well paths, drape georeferenced aerial imagery over height fields, drape contours over Surfer grid files, and label scatter plots. Voxler 3 also includes FaceRender, a graphical module that displays voxel-based geological data in a block-style model. *Golden Software Inc, 809 14th Street, Golden, CO 80401-1866, http://www.goldensoftware.com*

Films for high-resolution displays

Applied Materials has launched a new plasma-enhanced chemical vapor deposition film technology to produce high-performance, high-resolution displays for televisions and tablet computers. Available on Applied's AKT-PECVD system, the advanced insulating films enable the use of metal oxide–based transistors that produce smaller, faster-switching pixels to create the high-resolution screens preferred by consumers. The films provide a dielectric-layer interface that minimizes hydrogen impurities to improve the stability of metal oxide transistors and deliver optimized screen performance. The high-quality silicon oxide films can be deposited by the AKT-PECVD system with precise uniformity on sheets of glass up to 9 m^2 in size—a capability critical to achieving high production yields and low manufacturing costs. *Applied Materials Inc, 2821 Scott Boulevard, P. O. Box 58039, Santa Clara, CA 95050, http://www.appliedmaterials.com*

High-power semiconductor test instrument

With the introduction of model 2657A, a high-power source measurement unit instrument, Keithley Instruments adds high voltage to the company's series 2600A system SourceMeter family of high-speed, precision devices. Together, the instruments allow users to characterize a broader range of power semiconductor devices and materials. According to Keithley, a built-in 3000-V, 180-W source allows the 2657A to source up to five times as much power to a device being tested as other available systems, at a much lower cost. The precision, high-speed 6½-digit measurement engine enables 1-femtoamp current measurement resolution to support the low-leakage requirements of next-generation power semiconductor devices. Model 2657A is optimized for high-voltage applications, including testing power semiconductor devices such as diodes, FETs, and insulated gate bipolar transistors and characterizing newer materials such as gallium nitride, silicon carbide, and other compound semiconductor materials and devices. *Keithley Instruments Inc, 28775 Aurora Road, Cleveland, OH 44139-1891, http://www.keithley.com* ■