

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

Andreas Mandelis

Focus on test and measurement

Optical modulation analyzer

Agilent Technologies has added bit error ratio capabilities to its optical modulation analyzer. The BER analysis of a transmitter or link is the critical parameter in measuring the transmission quality of 40 G/100 G systems. The company has integrated into the analyzer a receiver that counts the errors and calculates the BER from detected data in real time or in large sample number capture mode. The test signal can be either a pseudo-random-bit sequence or a user-defined pattern. Measuring only the electrical BER from an optical link's transmitter input to receiver output leaves uncertain which of the three components—the transmitter, the link itself, or the receiver—caused the BER problem during a test failure. Being able to measure the BER of a physical layer signal allows users to clearly distinguish which part of the transmission system caused the fault. *Agilent Technologies Inc, 5301 Stevens Creek Boulevard, Santa Clara, CA 95051, <http://www.agilent.com>*

Antenna-mounting adaptors

Three new antenna-mounting adaptors from AR RF/Microwave Instrumentation allow horizontal and vertical polarization changes during testing without removing the antenna from the tripod. The adaptors are designed to be compatible with existing AR antenna models—adaptor model AM1000 is for use with antenna models AT1000 and AT1000A; adaptor model AM1001, with antenna models AT1080 and AT1080A; and adaptor model AM6000, with an-

tenna models AT5080 and AT6080. Each adaptor includes a 20-inch nonmetallic mast. Because the center of gravity is offset when moving the antenna between horizontal and vertical polarizations, the company recommends that users purchase a new tripod along with the antenna mount. The model TP1000B tripod features a robust design and a new angle-adjustment mechanism. *AR RF/Microwave Instrumentation, 160 School House Road, Souderton, PA 18964-9990, <http://www.ar-worldwide.com>*

Ethernet vibration instrument module

Data Translation has announced the DT8837 high-performance Ethernet (LXI) data acquisition instrument module for sound and vibration measurement applications. The transmission control protocol/internet protocol Ethernet operation mode of the DT8837 allows measurements to be monitored locally or remotely. Up to 16 instrument modules may be stacked for parallel operation of 64 separate integrated electronics piezoelectric accelerometer or voltage inputs. Each of the separate synchronized modules can also be triggered externally in various ways. ISO-channel technology uses galvanic isolation methods to guarantee 1000-V isolation between any two input channels and ± 500 V to earth ground. ISO-channel increases reliability by implementing unique isolation mechanisms for each 24-bit A/D converter in the four input channels and on the 24-bit stimulus D/A output channel, all operating in parallel. The benefit to users is total isolation of all inputs and outputs from each other and from digital ground. *Data Translation Inc, 100 Locke Drive, Marlboro, MA 01752-1192, <http://www.datatranslation.com>*

Metrology system in 3D

Veeco Instruments has introduced its NPFlex 3D metrology system for characterizing surfaces previously too difficult to measure because of size or part orientation. The NPFlex combines non-contact, white-light optical profilers with an open-access design to enable rapid, 3D data acquisition and analysis on a wide range of large samples for precision machining applications in the medical implant, aerospace, and automotive market sectors. It uses a gantry



design to provide more than 300 degrees of access for large samples. The optional swiveling optical head permits routine investigation of highly curved samples and beveled edges. The system's white-light interferometric technology provides greater accuracy, repeatability, and, importantly, data density than is possible with contact instrumentation. *Veeco Instruments Inc, 223 Wilmington, Suite 114, West Chester Pike, Chadds Ford, PA 19317, <http://www.veeco.com>*

Temperature, humidity, and dew-point data logger

Omega Engineering has introduced the OM-EL-USB-2-LCD, a standalone data logger that can measure and store up to 16 379 temperature readings over a range of -35°C to 80°C and the same number of relative humidity readings over a range of 0–100% RH. It also provides dew-point indication using the included Windows control software. A high-contrast $2\frac{1}{2}$ digit LCD offers cycling between the current temperature and humidity and the maximum and minimum stored values for each. Two high-intensity LEDs show logging and alarm status. The data logger is supplied with a long-life lithium battery that typically allows logging for up to one year. Data are downloaded by plugging the unit into a PC's USB port. A data-rollover function overwrites the oldest data when the memory is full, allowing for unlimited logging periods. Downloaded temperature, humidity, and dew-point data saved in text format can be graphed, printed, and exported to other applications for further analysis. *Omega Engineering Inc, One Omega Drive, Stamford, CT 06907-0047, <http://www.omega.com>*

Spectrograph calibration routine

IntelliCal is a spectrograph calibration routine from Princeton Instruments now available as an add-on to Light-Field, the company's new 64-bit data acquisition software package. Unlike traditional calibration methods that rely on a few mercury emission lines, IntelliCal refines the spectrograph parameters to match observed and calculated emission spectra in intensity space. The result is in an order-of-magnitude increase in wavelength accuracy with a greatly reduced need for user input. IntelliCal reports the root-mean-square wavelength error at each pixel of an array detector and stores the calibration information in the file header, giving users confidence in their results. Once a spectrograph has been calibrated, a one-click search-match algorithm identifies the current center wavelength position without the need for a new refinement cycle. Spectral tables from NIST are used for the highest possible accuracy. *Princeton Instruments, 3660 Quakerbridge Road, Trenton, NJ 08619, <http://www.princetoninstruments.com>*

Four-channel and 40-MHz oscilloscopes

LeCroy Corp is expanding its WaveAce oscilloscope line to include four-channel models from 60 to 300 MHz and adding a new two-channel, 40-MHz model. The four-channel models provide 10 kpts/ch of memory and a sample rate up to 2-GS/s; the 40-MHz model has 4 kpts/ch of memory and a sample rate of up to 500 MS/s. All models offer long memory, color displays, extensive measurement capabilities, and advanced triggering to improve troubleshooting and shorten debugging time. With USB host and device ports

and a LAN connection, the WaveAce oscilloscopes connect to a memory stick, PC, or printer for data saving or remote control. Combined with the streamlined, time-saving user interface, the features make the WaveAce oscilloscopes suitable tools for designing, debugging, and troubleshooting from 40 to 300 MHz. Additional features include pass/fail testing, user-definable digital filters, and a waveform sequence recorder. *LeCroy Corporation, 700 Chestnut Ridge Road, Chestnut Ridge, NY 10977-6499, <http://www.lecroy.com>*

Digital oscilloscopes and digitizers

Users of ZTEC Instruments' EPICS digital oscilloscopes and digitizers can now more quickly and easily integrate the instruments into the experimental physics and industrial control system environment. The oscilloscopes are available in five different series; each series includes two- and four-channel models. For example, the ZT4610 series features 4-GS/s maximum real-time sampling and 8-bit ADC resolution; the ZT4440 series, 800-MS/s maximum real-time sampling and 14-bit ADC resolution; and the ZT4430 series, 500-MS/s maximum real-time sampling and 13-bit ADC resolution. The oscilloscopes and digitizers are used with particle accelerators, high-energy light sources, and other large experiments around the world for various remote waveform monitoring and waveform analysis applications. *ZTEC Instruments Inc, 7715 Tiburon Street NE, Albuquerque, NM 87109, <http://www.ztecinstruments.com>*

Electrical power standards

Fluke Corp has introduced improved electrical power standards designed to deliver stable, precise reference power and energy for use in calibrating electrical measurement equipment. Users that could benefit from the new Fluke 6105A and 6100B standards include national measurement institutes, instrument service and calibration firms, electronics manufacturers, power utilities, and standards laboratories. The Fluke 6100B standard meets the accuracy requirements for today's power quality testing. In addition, it features improved accuracy and increased voltage channel current drive for calibrating energy meters that take power from their voltage input. A Microsoft Windows

user interface makes the 6100B and 6105A easy to operate. *Fluke Corporation, 6920 Seaway Boulevard, Everett, WA 98203, <http://www.fluke.com>*

Hand-held LED spectrolightmeter

Gigahertz-Optik's hand-held BTS256-LED has been designed to measure luminous flux or illuminance, color data, and spectral distribution of PC board-mounted LEDs, discrete LEDs within a module, miniature lamps, endoscopes, and any narrow-beam-emitting light source. Key components of the device include an auxiliary LED, the company's Bi-Technology sensor, and a built-in 50-mm-diameter integrating sphere with an interchangeable input optic nozzle designed to minimize positional error. The integrating sphere is made from Gigahertz-Optik's ODM98 white diffuse material and includes a sealed window light output port. The Bi-Technology BTS256P light sensor houses both a high-precision photometric filtered photodiode for accurate flux detection over a wide dynamic range and a compact low-stray-light-design spectrometer. An ultracompact, electronically controlled shutter for on-line offset compensation of the diode array improves signal-to-noise ratio. *Gigahertz-Optik Inc, 5 Perry Way, Newburyport, MA 01950, www.led-measurement.com*

Spectrophotometer for photovoltaics

The QDI 2010 thin-film microspectrophotometer from CRAIC Technologies measures the transmission and reflectance of materials used to make photovoltaic cells. Able to analyze films of many materials on both transparent and opaque substrates, the QDI 2010 allows users to determine thin-film thickness of even microscopic sampling areas. It can be combined with the company's contamination imaging capabilities and can test the transmissivity of PV cell protective covers. Sampling areas can range from more than 100 μm across to less than 1 μm . The microspectrophotometer incorporates easily modified metrology recipes, software to measure new films, and advanced data analyzing tools. *CRAIC Technologies Inc, 948 North Amelia Avenue, San Dimas, CA 91773, <http://www.microspectra.com>* ■

