

NEW PRODUCTS

Focus on test, measurement, quantum metrology, and analytical equipment

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 its description. Please send all new product submissions to ptpub@aip.org.

Andreas Mandelis



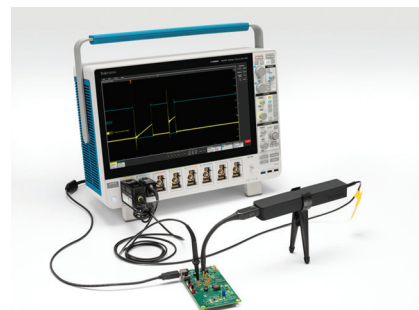
Compact 24-bit digitizer

Bartington now offers a compact digitizer that converts the output signals of most of the company's analog magnetometers. The DG-1, which has 24-bit resolution and three input channels, provides an interface

to a PC via USB for live readout and logging of digital data from the sensor. A robust application programming interface (API) supports .NET Framework 4.8.1 (C#, VB.NET) and native C++ (ISO C++ 20). The API encapsulates the device's protocol, simplifying communication and integration. It is fully compatible with the 64-bit versions of Windows 10 (version 1607 and later) and Windows 11. To accelerate development and streamline integration into users' software, code examples for C++, C#, and VB.NET are provided. **Bartington Instruments Ltd**, 10 Thorney Leys Business Park, Witney, Oxon OX28 4GG, UK, www.bartington.com

Vector network analyzer

Rohde & Schwarz has expanded its vector network analyzer portfolio with the R&S ZNB3000, a high-precision instrument suitable for use in RF laboratories and production facilities. With frequency ranges from 9 kHz to 4.5, 9, 20, and 26.5 GHz, the R&S ZNB3000 addresses applications in the communications, electronic goods, and aerospace industries and in the design of digital high-speed printed circuit boards and cables. It has a dynamic range of up to 150 dB, which, according to the company, is the highest in its class, and an excellent trace noise of less than 0.0015 dB rms. It also offers its class's highest output power—for example, +11 dBm at 26.5 GHz—which yields better setup loss compensation. The frequency can be easily upgraded to meet fast scale-up requirements. Using external switch matrices, the instrument can be scaled up for multipoint measurements up to 48 ports. **Rohde & Schwarz GmbH & Co KG**, Muehlendorfstrasse 15, 81671 Munich, Germany, www.rohde-schwarz.com



Isolated current probes

The TICP series IsoVu isolated current probes from Tektronix deliver high-bandwidth, low-noise current measurements in applications that require greater power capacity and efficiency. According to the company, the new probes are the first to use RF isolation, and they deliver high precision and safety when measuring fast-changing currents across low- and high-voltage systems. They provide complete galvanic isolation between measurement systems and devices under test, therefore eliminating ground loops. They also offer a common-mode rejection ratio (CMRR) that is more than 30 times as high as that of traditional differential voltage probes: 140 dB CMRR at DC and up to 90 dB at 1 MHz. In a 1× configuration, the 50 Ω input offers very low noise of less than 4.7 nV/ $\sqrt{\text{Hz}}$ (less than 150 μV at 1 GHz). Available in three models with bandwidths of 1 GHz, 500 MHz, and 250 MHz, the probes allow oscilloscopes to capture accurate measurements of fast-changing currents across a wide voltage range—from microamps to kiloamps—in nanoseconds. **Tektronix Inc**, 13725 SW Karl Braun Dr, PO Box 500, Beaverton, OR 97077, www.tek.com



Residual gas analyzers

Stanford Research Systems has announced its RGA120 series of residual gas analyzers, which build on the previous RGA100 series. The 120, 220, and 320 amu analyzers have increased mass range, better performance, and new capabilities such as built-in analog input and output. For increased sensitivity and faster scan rates, the company offers an optional electron multiplier that detects partial pressures down to 5×10^{-14} torr.

The RGA systems include a probe consisting of an ionizer, a quadrupole mass filter, and a detector. Its simple design, with few parts, minimizes outgassing and reduces the introduction of impurities into vacuum systems. All the electronics needed to control the RGA head are densely packed into the electronics control unit; a real-time Windows software package facilitates probe control, data acquisition, and analysis and supports multiple head operation. The RGA120 series is suitable for applications involving gas analysis, leak detection, and vacuum processing. **Stanford Research Systems**, 1290 Reamwood Ave, Ste D, Sunnyvale, CA 94089, www.thinksrs.com

Sampler-extended real-time oscilloscope

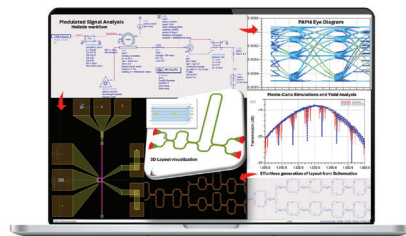
Pico Technology has added the PicoScope 9404A-25 model to its PicoScope 9400 series. The new high-performance oscilloscope features a 25 GHz bandwidth on four channels and the company's sampler-extended real-time oscilloscope technology, which combines the advantages of traditional real-time acquisition with sampling oscilloscope capabilities. The scope can trigger directly on the signal and record pretrigger data while also achieving the extremely high time and amplitude resolution of a sampling scope. The PicoScope 9404A-25's high-speed internal trigger up to 18 GHz eliminates the need for an external trigger or clock-recovery circuit, making it versatile and convenient for challenging high-speed signal analysis. With a real-time sampling rate of 500 MS/s, the oscilloscope can capture lower-frequency, nonrepetitive signals or single-shot events. For higher-speed repetitive signals, it uses random equivalent-time sampling to achieve effective rates of up to 5 TS/s. **Pico Technology**, 320 N Glenwood Blvd, Tyler, TX 75702, www.picotech.com



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Software for photonic circuit design

Keysight Technologies developed its Photonic Designer software to help users optimize the performance of photonic integrated circuits through advanced physics-based simulation. Photonic Designer integrates real-world measurement data directly into the simulation workflow to optimize models and streamline compliance and validation. The software enables users to avoid costly iterations by ensuring compatibility with foundry process design kits. Providing an intuitive interface for circuit design and layout generation, the software makes pure optical and combined electrical-optical-electrical workflows more efficient. With its photonic design automation tool, it eliminates fragmented workflows and improves accuracy. The software's optical finite-difference eigenmode solver, accessed either via a graphical user interface or directly within passive optical components, automatically calculates optical modes for each component during simulations, ensuring precision in circuit performance analysis. **Keysight Technologies Inc**, 1400 Fountaingrove Pkwy, Santa Rosa, CA 95403-1738, www.keysight.com 



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