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

EMI test receiver

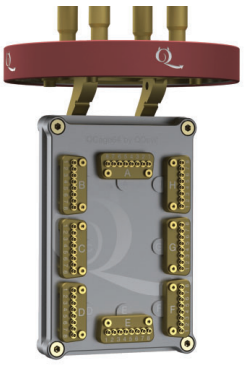
The R&S EPL1000 from Rohde & Schwarz is a compact, complete, and CISPR 16-1-1 compliant test receiver for quick, precise electromagnetic interference (EMI) measurements of up to 30 MHz. For seamless measurements over extended periods of time, the very fast time-domain scan lets the R&S EPL1000 check all frequencies in CISPR bands A or B in a single shot. A user-friendly graphical user interface helps electromagnetic compatibility engineers quickly find infrequent emissions and gain a good overview. The R&S EPL1000 has a pulse-protected input; an autoranging function prevents the overloading of the signal-processing chain. Built-in preselection ensures a high dynamic range and enables the acquisition of short pulses, and spectrogram and intermediate frequency-analysis functions facilitate detailed signal analysis. Automation simplifies measurements and ensures exact reproducibility of test sequences. An integrated CW signal generator with a tracking generator function is optional. ***Rohde & Schwarz GmbH & Co KG**, Mühldorfstrasse 15, 81671 Munich, Germany, www.rohde-schwarz.com*

Inline gas analyzer

MKS Instruments has announced additional measurement capabilities for its T-Series inline gas analyzer. The instrument now provides simultaneous measurement of silicon tetrafluoride and carbon dioxide found in by-products of semiconductor processes. The gas analyzer uses the company's tunable filter spectroscopy, a scanning technique capable of generating spectra in the IR region. By subtracting spectra from interferent gases in the same IR regions, the technology improves gas-identification accuracy and measurement compared with traditional methods. It also enables multicomponent measurement. The T-Series inline gas analyzer is suitable for end-point detection in advanced semiconductor processing and etch-process monitoring in a clean chamber. ***MKS Instruments Inc**, 2 Tech Dr, Ste 201, Andover, MA 01810, www.mks.com*

Multipurpose power amplifier

AR RF/Microwave Instrumentation designed its model 800W1000 solid-state broadband power amplifier for applications that require instantaneous bandwidth, high gain, and linearity. Those include not only general-purpose testing but also testing of radiated and conducted electromagnetic compatibility (EMC), antennae, and components. The self-contained, air-cooled power amplifier delivers a minimum of 800 W across the 80–650 MHz frequency range and 750 W across 650–1000 MHz. The device is protected from input overdrive beyond 0 dBm and from various failure conditions, including high temperatures and power-supply faults. The low level of spurious signals and linearity make the amplifier suitable as a driver in testing wireless and communications components and subsystems; because it covers a wide bandwidth, it is suitable for 5G network testing. Its class A design makes it appropriate for EMC test applications that require continued operation into high-voltage standing-wave ratio loads, including open and short circuits. ***AR RF/Microwave Instrumentation**, 160 Schoolhouse Rd, Souderton, PA 18964, www.arworld.us*



Chip carrier for multiqubit processors

Quantum Machines has unveiled the QCage.64 from QDevil, the company's Quantum Electronics business unit. QCage is a microwave chip-packaging system for high-fidelity operation of superconducting processed and microwave-resonator-based quantum measurements. Designed for interconnecting superconducting quantum processors with up to 30 qubits, the QCage.64 chip carrier features a sample holder that suspends the chip in the microwave cavity to minimize losses and decoherence, a low-loss printed circuit board (PCB) with embedded coplanar transmission lines for signal integrity, and an electromagnetically compatible superconducting shielding enclosure. The cavity and PCB are optimized for resonance-free transmission. According to the company, data from leading quantum laboratories have shown that the QCage chip carrier offers a suitable low-loss environment for operating superconducting resonators with Q factors as high as 2×10^8 and transmon qubits with coherence times of longer than 200 μs. ***Quantum Machines**, Yigal Alon St 126, Tel Aviv-Yafo, Israel, www.quantum-machines.co*

Compact vacuum meters

Thyracont has improved the performance of its vacuum-meter product family and enhanced its intuitive handling. The new VD800 series measures absolute pressure in the range of 2000 mbar to 5×10^{-5} mbar and relative pressure from −1060 mbar to 1200 mbar. A big graphic display and 4×1 membrane keypad provide comfortable menu-driven operation, and an integrated data logger saves multiple measurement series with its real-time clock data. With sample rates from 50 ms to 60 s, the instruments are suitable for both fast vacuum processes and long-term monitoring in applications such as quality control and leakage testing via rate-of-rise measurement. The model VD800, designed to be used with an external Thyracont USB transducer, is suitable for reduced-space applications or for readout of permanently installed sensors. The VD810, with a resistant ceramic sensor, produces measurements independent of gas type in the rough vacuum range. The piezo/Pirani combination sensor of the VD850 covers a wide measuring range in rough and fine vacuum with high precision and accuracy. ***Thyracont Vacuum Instruments GmbH**, Max-Emanuel-Str 10, 94036 Passau, Germany, https://thyracont-vacuum.com*

Automated IR microscope for defect analysis

Shimadzu developed its AIMsight IR microscope to more efficiently identify and analyze micro contaminants, such as those that might adhere to pharmaceutical pills, dirt on electronic circuit boards, and microplastics. AIMsight offers easy determination of the measurement range via a wide-field camera and automatic identification of measurement targets, setting of measurement position, and contaminant analysis. The IR microscope needs to be connected to a Fourier-transform IR (FTIR) spectrophotometer, such as the company's IRXross model. Using the reflection and transmission of IR light, the microscope can measure microregions that cannot be measured by FTIR units alone. Out of concern for the environment, a type II superlattice detector has been adopted that does not use mercury or cadmium, which are restricted under the European Restriction of Hazardous Substances Directive. AIMsight can be used in various sectors, including drug manufacturing, materials science, electrical devices and electronics, machinery, transportation equipment, and the environment. ***Shimadzu Scientific Instruments Inc**, 7102 Riverwood Dr, Columbia, MD 21046, www.shimadzu.com*

Spectrum analysis for satellite communications

A real-time spectrum analysis (RTSA) solution from Keysight helps satellite operators perform rigorous, accurate signal-interference monitoring to identify anomalies and mitigate service degradation as they happen and thereby provide high-quality service to users. The RTSA solution was developed for use with the company's N9042B UXA signal analyzer. According to the company, the software-based RTSA solution reduces analysis time and improves the probability of intercept. It enables the N9042B UXA to conduct continuous, gapless capture and analysis of elusive and transient signals with optical-data-interface streaming up to 2 GHz. To minimize the time gap between processing and recapturing signals, Keysight's advanced field-programmable gate-array technology enables a multithreaded, parallelized RTSA measurement up to a bandwidth of 2 GHz. By using digital twins that speed the design and testing of satellite payloads, the RTSA test solution can accelerate innovation and lower prototyping costs. ***Keysight Technologies Inc**, 1400 Fountaingrove Pkwy, Santa Rosa, CA 95403-1738, www.keysight.com*

Software for Raman and correlative measurement control

WITec, an Oxford Instruments company, has released its Suite SIX software for Raman and correlative measurement control, data acquisition, and postprocessing. Developed to enhance the configurability of the company's alpha300 microscope series, the software offers a multiuser management capability that allows site administrators to determine the instrument functionalities and data-access rights associated with each system login. It assists in administrators' efforts to comply with good-practice guidelines, such as the US FDA's 21 CFR Part 11; that is especially important for pharmaceutical R&D. To streamline recurring experiments, the software can be used to develop a library of distinct hardware setups. TrueOrigin, Suite SIX's portable coordinate system, expedites the correlation of data acquired by multiple techniques from the same position, even when the sample is moved between instruments. To navigate to an area of interest or to conveniently document a project, it can also import images of a sample made with an external camera. ***WITec Instruments Corp**, 130G Market Place Blvd, Knoxville, TN 37922, https://raman.oxinst.com* PT