newproducts

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Moveable Over-the-Air Test Chamber for 5G

Rohde & Schwarz offers the first moveable over-the-air test chamber for 5G antennas and transceivers. With the new R&S ATS1000 all-in-one antenna test system, active and passive antennas as well as transceivers for future fifth generation (5G) mobile networks can be tested in a compact, moveable shielded RF test chamber. This enables far-field antenna characterizations and initial RF measurements for 3GPP 5G NR in the millimeter wavelength range.

The new R&S ATS1000 antenna test chamber allows developers and production engineers to perform over-the-air (OTA) measurements for 5G on their antenna modules, transceivers, chipsets and wireless devices. Antenna and transceiver measurements are possible in the frequency range from 18 GHz to 87 GHz. The system therefore supports all millimeter-wave frequency bands currently considered for 5G. The compact test chamber makes it possible to measure mobile devices in the far field.

The R&S ATS1000 consists of a rack-sized shielded RF test chamber on castors, suitable mounts for test objects and sensors, and a wideband measurement antenna, which covers the whole frequency range. Using the associated test and measurement equipment and the R&S AMS32 antenna measurement software, radiation patterns of 5G antenna arrays can be measured with extreme precision in just a few minutes. A positioning laser supports precise orientation of the test object.

By combining the R&S ATS1000 with an R&S TS8980 5G RF test system, users can determine relevant RF parameters (e.g., power, ACLR and EVM) from OTA measurements. This is crucial because many 5G components do not have any connectors and therefore cannot be tested in conducted setups. The system enables comprehensive 3D characterization, verification measurements and functional testing of 5G components. Rohde & Schwarz conformation test solutions use the well-established R&S CONTEST software to output results in the form of 3D graphics.

For automated, final functional testing, the R&S AMS32 software allows users to control the R&S ATS1000 remotely. It also generates configurable reports for documentation. The solution additionally offers near-field/far-field transformation for larger test objects.

For more information, visit: www.rohde-schwarz.com/ad/press/ats1000.

Full Color 3D Printing Platform

HP Inc. has expanded its 3D printing portfolio with the introduction of its new Jet Fusion 300 / 500 series of 3D printers, the industry's first 3D printing technology to enable manufacturers to produce engineering-grade, functional parts in full color, black or white – with voxel control – in a fraction of the time of other solutions. Depending on configuration and color preference, the Jet Fusion 300 / 500 series is available starting in the $50,000s, enabling small- to medium-sized product development teams and design businesses, entrepreneurs, and universities and research institutions to access HP's industry Multi Jet Fusion printing technology.

The new Jet Fusion 300 / 500 series complements HP's existing industrial-grade Jet Fusion 3200/4200/4210 3D solutions which deliver low cost per part and are designed for manufacturing environments. With this portfolio expansion, HP is providing users of its Multi Jet Fusion solutions the ability to prototype and produce new designs and applications on

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the same platform and stay ahead with a future-ready technology for voxel control beyond color.

HP's unique ability to control part properties at the individual voxel level enables the design and production of previously unconceivable parts and is now available, for the first time, in full color.

The HP Jet Fusion 300 / 500 series offerings include:

- HP Jet Fusion 340 (Black and White) / 380 (Color): for customers who have smaller part-size needs or who commonly print fewer parts per build.
- HP Jet Fusion 540 (Black and White) / 580 (Color): with a bigger build size than the 300 series for customers who have larger part-size needs or heavier production demands.

The HP Jet Fusion 300 / 500 3D printers will launch with a new material, HP 3D High Reusability CB PA 12. Parts using this material will have mechanical properties similar to the HP 3D High Reusability PA 12 material from HP's industrial solutions.

For complete details and technical specifications, please visit www.HP.com/go/Color3DPrint.

Multi-device Synchronization for Lock-in Amplifiers and Arbitrary Wave Generators

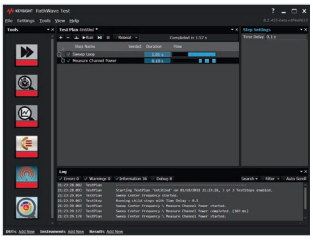
Zurich Instruments' Lock-in Amplifiers and Arbitrary Wave Generators (AWG) can now be synchronized thanks to the new Multi-device Synchronization function (MDS). This allows multiple instruments to be connected together and controlled on one user-friendly interface. The MDS takes care of the synchronization of both the 10 MHz clock and the sampling rates of each connected instrument. Instead of using one multi-channel instrument, single instruments can be added as required and subsequently synchronized as one. This increases the flexibility and scalability of existing measurement systems.

The included LabOne software allows measurements to be taken simultaneously on multiple instruments. Datapoints taken at the same time are labelled with the corresponding timestamp, allowing the datapoints to be clearly assigned and analyzed. Furthermore, LabOne offers a wide range of integrated tools for signal analysis, reducing the complexity of the experimental setup (Lock-in Amplifier, Sweeper, Signal Generator, Oscilloscope, FFT-Spectrum Analyzer, Spectroscope, Digitizer). Existing customers of Zurich Instruments can also add MDS functionality free of charge by updating LabOne to version 17.12.

Multi-device Synchronization is especially interesting when building prototype quantum computing setups, as the number of signal channels can be easily and reliably scaled up. Further applications include quantum transport measurements where, for example, Hall resistance and electrical resistance are measured simultaneously. In synchrotron applications such as beam position monitoring, MDS facilitates multi-axis measurements.

Find more information at www.zhinst.com.

Platform Enables Users to Accelerate Innovation and Product Development



Keysight Technologies has unveiled PathWave, claiming it to be the industry's first software platform that integrates design, test, measurement and analysis. As a result, PathWave enables customers to accelerate innovation and product development from concept through manufacturing and deployment.

PathWave is based on Keysight's expertise to ensure consistency, accuracy and measurement integrity. The software platform provides customers with flexible and immediate access to the design and test tools they need, when they need them. The interoperability of the design and test tools and advanced data management significantly speeds the product development cycle, eliminating the need to re-create individual measurements and test plans at each discrete stage of the process.

PathWave is an open, scalable, and predictive software platform that integrates hardware and software at every stage in the product development workflow. It combines design software, instrument control, and application-specific test software in an open development environment, allowing users to create high-performance solutions fast.

PathWave offers a set of integrated software products for the entire design, test and verification workflow. These products are connected, interoperable, and rapidly reconfigurable, delivering efficient workflow that enables customers to:

- Allocate the right computing resources where and when needed
- Evaluate collected data to optimize workflow
- Ensure new hardware and software works with existing hardware to maximize ROI
- Predict bottlenecks and rapidly correct to ensure efficient workflow process
- Review project status from anywhere to maintain completion commitments

More information is available at www.keysight.com.

Electromagnetic Compatibility (EMC) Tester

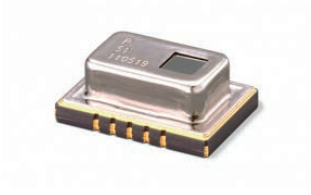
The new Electromagnetic Interference (EMI) receiver TDEMI® ULTRA from GAUSS INSTRUMENTS® provides unique features, such as 685 MHz real-time bandwidth, ultra-fast receiver scanning as well as multi GHz real-time scanning up to 40 GHz. GAUSS claims it is the fastest EMI receiver in the market. It is a multi-purpose instrument for a wide range of applications and due to its compact design, a 12 V supply, and a weight of less than 10 kg, it is a great tool for field testing or on-board testing applications.

With it strong capabilities, the TDEMI® ULTRA is well-suited for use in conducted and radiated measurements and much more. By providing the lowest noise floor and the high dynamic of todays' receivers in the market, the TDEMI® ULTRA offers highest performance for all challenging applications.

Also, a time-saving and highly efficient full automation of your EMC and communication testing needs according to all EMC or ETSI standards is available with the EMI64k software suite.

For more information, visit www.gauss-instruments.com.

High-Performance Infrared Array Sensors



Panasonic Grid-EYE High-Performance Infrared Array Sensors are surface mountable and feature 64 thermopile elements in an 8x8 grid format that detect absolute temperatures by infrared radiation. Grid-EYE is able to provide thermal images by measuring actual temperature and temperature gradients. Grid-EYE enables detection of multiple persons, identification of positions and direction of movement, almost independent of ambient light conditions without disturbing privacy as with conventional cameras.

The built-in silicon lens provides a viewing angle of 60°. Measurement values are viewable through an I^2C interface in 1 or 10 frames per second. The interrupt signal output delivers a quick response to time-critical events for a high degree of flexibility.

AMGU4241 Infrared Array Sensors Grid-EYE Unit combines four Grid-EYE sensors to increase the detection area up to 3.8 m^2. This AMGU4241 sensor transmits information via RS485 using Modbus protocol.

Features:

- Dimensions: 11.6 × 4.3 × 8.0 mm (L x H x W)
- Operating voltage: 3.3 V or 5.0 V (depends on P/N)
- Current consumption: Typ. 4.5 mA (normal mode); 0.8 mA (stand-by mode), 0.2 mA (sleep mode)
- Temperature range of measuring object: With amplification factor high gain: 0 °C to 80 °C, with low gain: -20 °C to 100 °C
- Field of view: 60° (vertical and horizontal)
- Number of pixels: 64 (vertical 8 x horizontal 8)
- External interface: I^2C (fast mode)
- Frame rate: 1 or 10 frames/s
- Typical absolute temperature accuracy: Typ. ±2.5 °C (depends on P/N)

Find more information at na.industrial.panasonic.com/products/sensors.

All-In-One Solution For EMI/EMC Compliance Testing

Tektronix has introduced EMCVu, a new all-in-one solution for EMI/EMC pre-compliance testing and troubleshooting. In today's electronic design environment, about 50 percent of products fail electromagnetic compatibility (EMC) testing the first time. EMCVu gives engineers an accurate, convenient and cost-effective approach to determine if their product designs will pass EMC emission compliance testing on the first try.

With the arrival of Internet of Things (IoT) and a proliferation of electronic devices that can interfere with each other, designing products to meet EMC emission requirements is critical. For many engineers just starting work on new IoT devices, EMI/EMC testing can be intimidating, and failing compliance testing leads to significant cost overruns and schedule delays. Pre-compliance testing reduces failure rates, but introduces its own challenges including difficult and expensive equipment set up, testing accuracy, painful debugging, and a lack of reporting tools.

At the core of the new solution are the Tektronix real-time USB spectrum analyzers, including the affordable RSA306B, that offer the performance of traditional desktop instruments at a fraction of the cost. Powered through the USB connection, the small size of Tektronix' real-time USB spectrum analyzers makes it easy to perform EMI/EMC testing outside the lab environment in relatively low-noise environments, such as basements or parking garages.

The instruments are controlled by SignalVu-PC software running on a laptop or tablet. For this application, SignalVu-PC has been enhanced with optional EMCVu software to provide pre-compliance and troubleshooting capability in the same user interface.

The spectrum analyzer and software are complemented with a comprehensive set of accessories that have all been carefully selected and thoroughly evaluated to maximize test efficiency. To ensure accurate results and save time for users, the loss or gain of the various accessories has already been captured in the software and is accounted for during measurements.

For more information, go to: www.tek.com/application/electromagnetic-interference-emi-and-electromagnetic-compatibility-emc.

Test and Inspection Systems

Seica introduces the new, fully automated Pilot V8 next > series flying prober, featuring a renovated and stylish look, thanks to the premium materials of the chassis, and innovative electrical testing performance Seica claims to be the most complete flying probing test platform on the market. In its most complete configuration, the Pilot V8 next > series tester will provide up to 20 mobile test resources for an electronic board, ranging from probes which can supply today up to 3 amperes, high-resolution cameras for automatic optical inspection, barcode reading, laser, capacitive probes, pyrometers, optical fiber sensors for LEDs, flying connectors for boundary scan and on-board programming, up to high-frequency probes for measurements over 1.5 GHz.

Highly oriented to medium and high-volume production, the Pilot V8 next > series will be available in a fully-automated version, making its vertical architecture perfectly suitable to be combined with board loading/unloading modules, capable of hosting from 1 to 12 board magazines (even of different types). The HR (high resolution) version of the Pilot V8 next > series allows the system to test very small sized objects, around 30 µm, while the XL version extends the work area from the standard 610 × 540 mm to 800 × 650 mm, providing unique solutions for testing "extra-large" boards.

Seica is also highlighting the DRAGONFLY next > series, an AOI system providing optical inspection capabilities for through-hole technology (THT) components of electronic boards, as well as conformal coating (CC), increasingly used today to protect the products after manufacturing. Both the THT and CC versions of the DRAGONFLY feature the opportunity to inspect one or both sides of the board, which is conveyed on a standard SMEMA compliant rail conveyor, driven by an intuitive and streamlined management software which will allow commissioning and application program development in a few hours.

Please visit www.seica.com for more information.

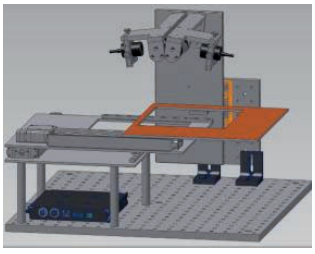
Miniature Shock Accelerometers

PCB® has released two new miniature piezoelectric accelerometers. They are small, single axis ICP® voltage output with measurement ranges of +/- 5,000 g (model 352A91) and +/- 20,000 g (model 352A92). Both are in a similar package with low mass under 0.006 ounces (0.17 grams) and cover a broad frequency range of 1.2 to 10,000 Hz at +/- 5%. The accelerometer development concentrated on survivability under test in harsh environments. The hermetically sealed titanium housing and flexible cable design enable the sensor to survive high overload shock (+/- 20,000 g peak) under thermal load up to +325 °F (163 °C). These features make them ideal for small component testing, environmental stress screening, and impact testing of electronic board assemblies.

Built-in ICP® microelectronics provide a low noise, low impedance output signal for low transmission loss over long distances.

For additional information, visit www.pcb.com/352A9x.

Advanced Terahertz Imaging Platform



Reacting to the growing demand in non-destructive testing applications, TOPTICA has further extended its terahertz instrumentation portfolio. This year the company presents a new terahertz Imaging Extension for its successful time-domain spectroscopy platform TeraFlash. Owing to the unique spectral bandwidth of the TeraFlash (0.1 to 5 THz), researchers can exploit the full potential that the combination of imaging and spectroscopic methods has to offer.

The Imaging Extension uses two precise linear stages to scan a sample through the focus of the terahertz beam. The translational movement is synchronized with the delay-stage within the TeraFlash, speeding up the measurements significantly, allowing the system to acquire complete waveforms for up to 16 pixels per second. The positioning accuracy is better than 200 µm over a 15 × 15 cm field of view.

Co-developed with experts from Fraunhofer Heinrich Hertz Institute (Berlin, Germany), the Imaging Extension comes in two versions – a "basic" setup for researchers who wish to use their own optical components, and a "complete" version that includes parabolic mirrors for beam shaping and focusing.

The Complete Imaging Extension offers a unique flexibility: with the help of alignment pins, users can quickly reconfigure the optics from a transmission setup to a reflection geometry and vice versa.

Both versions feature a powerful software package that offers a choice of contrast parameters including amplitude, phase and layer thickness.

Find more information at www.toptica.com/.

Advanced Motor Protection via Bluetooth

The MP8000 series from Littelfuse are advanced motor protection electronic overload relays, fully programmable via Bluetooth® using an iPhone® or Android™ smartphone or tablet with the Littelfuse App. It is easy to use, and arc-flash safety is increased because the app allows settings to be modified and real-time operational information viewed. Viewing operational information and faults on the app does not require the user to open the control panel. The MP8000 protects any motor drawing 0.5-1,000 full load Amps (external CTs are required above 100 Amps). It is designed for single or 3-phase systems with operating voltages of 90-690 VAC (use of external potential transformers can extend upper voltage range above 690 VAC).

Protection is implemented by combining overload, voltage, phase loss and reversal, voltage and current unbalance, power monitoring, and underload in one package. For standalone applications, the Bluetooth® interface can be used when paired with a smartphone or tablet.

The units also feature an Ethernet communications port that can be used to form an Ethernet Modbus TCP/IP network. Units can be remotely monitored and controlled from a PC, or SCADA system, and data logging through a PC with the optional MP8000 software or other software program using the MP8000 memory map.

Find more information at www.littelfuse.com.

Coordinate Measuring Machine (CMM) Series Focuses on Productivity

Hexagon Manufacturing Intelligence announce the latest evolution of its GLOBAL S coordinate measuring machine (CMM) series, customizable for specific inspection work and changing manufacturing objectives. The new CMM platform features four capability packages focused on customer productivity drivers: Throughput, Precision, Multi-Purpose and Shop-Floor. Built on Hexagon Manufacturing Intelligence's Enhanced Productivity Series (EPS) concept, the GLOBAL S utilizes Hexagon's smart technologies and sensor configurations to streamline the creation, execution and analysis of measurement routines. The EPS concept presents users with software and probe choices catering to their unique applications, as well as machine options such as the vibration-reduction system Compass, which enhances machine scanning throughput and performance, the PULSE environmental monitoring tool and machine messaging lights for highly visible notifications. The GLOBAL S's next-generation capabilities are conveyed in the machine's modern design by Pininfarina, a renowned international design firm.

The GLOBAL S Throughput capability package benefits mass production manufacturers that require reduced measuring cycle times to increase production volume. The Precision capability package caters to users who need confidence when measuring parts with tight tolerances and complex geometries. The Multi-Purpose capability package is a flexible solution for manufacturers measuring a variety of materials with different features and surface characteristics. Shop-Floor, the fourth GLOBAL S capability package, offers a solution for customers who need to integrate measurements on the production floor, enabling process optimization.

GLOBAL S comes equipped with PC-DMIS or QUINDOS measuring software depending on the choice of capability package. Other options include Q-DAS statistical process analysis (SPC) software and the HxGN SMART Quality data and resource management system.

Find more information at www.hexagonmi.com/.

Robert Goldberg (r.goldberg@ieee.org) has over 35 years' experience with over 25 years in management of the design and development of hardware and software for a broad range of military electronic products involving digital, RF/Microwave, electro-optical and electromechanical systems. He is retired from ITT Aerospace Communications Division in Clifton, NJ, where he was responsible for Sensor Communication programs utilizing the application of sensor radios developed by ITT as a result of work with DARPA on the Small Unit Operations Situation Awareness System (SUOSAS). Prior to joining ITT, he held positions in systems test and systems engineering with Northrop Grumman in programs related to RF and IR electronic warfare systems. He is a Fellow of the IEEE and is currently chairman of the Fellows Evaluation Committee of the IEEE Instrumentation and Measurement Society.