newproducts

Automated and AI-Driven Testing Optimize Experiences on 5G Smartphones

Keysight Technologies, Inc. introduces enhancements to the company's Nemo Device Application Test Suite. This software-centric solution uses automation and artificial intelligence (AI) to enable wireless service providers and application developers to accelerate the assessment of smartphone users' real-world interactions with native applications.

During the past few years, the use of mobile applications globally to access digital content has grown significantly. Because native mobile apps offer an optimal and customized experience compared to mobile web browsers, the use of mobile applications is fueling this growth.

Keysight leveraged AI, machine learning (ML), and automation, using data captured by a native mobile app (not simulated data traffic), to create the new device test app method. This delivers a more accurate assessment of an end-user's interaction with the same mobile app. The new application test automation method enables wireless service providers to rapidly optimize 5G network performance and deliver a greater quality of experience (QoE) for smartphone users accessing some of the world's most widely used OTT services and social media applications.

The new automated test app method is one of three complementary test methods available within Keysight's Nemo Device Application Testing Suite. Depending on the type of the mobile application and the key performance indicators (KPIs), a specific test method is used in combination with a companion Nemo field test solution. Nemo Testing Suite users receive a comprehensive, realistic, and flexible 5G network performance validation and end-user QoE assessment.

Keysight's Nemo test tools capture real measurement data in the field for real-time or post-process analysis. These test tools include Nemo Outdoor 5G NR Drive Test Solution, Nemo Backpack Pro 5G In-Building Benchmarking Solution, and Nemo Network Benchmarking Solution. Keysight's Nemo Device Application Testing Suite offers three complementary test app methods for validating the end-user experience of accessing OTT services and applications.

For more information on the new features in the Nemo Device Application Test Suite, visit

https://www.keysight.com/us/en/products/nemo-wireless-network-solutions.html.

Margin Test Solution to Simplify and Speed PCIe Gen 3 and Gen 4 Test

Tektronix, Inc. has announced a new product category that revolutionizes PCI Express testing, transforming time to market, cost, and accessibility. The new TMT4 Margin Tester breaks conventions of

PCIe testing, delivering fast test times. Plug-and-play set up and easy-to-use interface combine to deliver in minutes results that, up until now, required hours or even days of set up and testing.

TMT4 Margin Tester breaks new ground as a specialized testing tool for design and validation of PCIe Gen 3 and Gen 4 motherboards, add-in cards, and system designs. While PCIe testing normally requires complex test systems and engineers with deep expertise and knowledge, the TMT4 Margin Tester enables engineers at all levels of experience to evaluate the health of transmitter (Tx) and receiver (Rx) links faster than ever, greatly reducing time to market and cost of ownership. The platform supports the majority of common PCIe form factors, including CEM, M.2, U.2, and U.3, with testing capabilities of up to 16 lanes across PCIe presets 0-9, using a single standard connector.
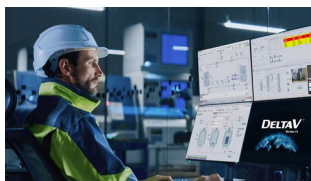
Tektronix claims the TMT4 Margin Tester is unrivaled in its speed and versatility for PCIe testing, making it a great option to conduct earlier and more frequent evaluation of board- or system-level link health during design and validation. The TMT4 tester is intended to complement full validation and

compliance testing systems consisting of oscilloscopes and BERTs, by making it possible to uncover issues earlier in the design process prior to an in-depth examination using traditional equipment.

More information is available at http://www.Tek.com.

Control System Update Lays Foundation for Software-Driven, Data-Centric Automation Platform

Emerson has released a new version of its DeltaV™ distributed control system (DCS). Version 15 of the DeltaV DCS helps plants digitally transform operations through improved production optimization and enhanced operator performance. New software designed to reduce the burden of IT support and modernization spend coupled with expanded analytics will help increase flexibility and speed to market and drive operational improvements.

Market forces and public expectation are putting more pressure than ever on manufacturers to drive improved performance and sustainability. Meeting these goals, especially in an era of personnel shortages, means making the most of available data. DeltaV version 15 expands access to critical data to provide every operator with actionable decision support. New infrastructure makes automation easier to set up and maintain while real-time analytics and an improved human machine interface (HMI) help operators improve situational awareness.

Project and operations teams rely on virtualization to reduce the hardware and energy footprint of the automation system while simultaneously increasing its availability. DeltaV now supports a hyperconverged infrastructure (HCI) virtualization option that can be deployed in half the time of a traditional virtualization setup. DeltaV HCI is easy to scale and maintain and delivers improved performance. The HCI platform is easily expandable and scalable, allowing users to future-proof their investment, and is the foundation of the DeltaV evolution into a data-centric and software-defined system.

Enhancements to DeltaV Live, a modern HTML5-based system, built for purpose HMI, empower operators with easy access to expert insights for more effective, efficient decisions that drive better performance and help personnel of any skill level. Teams can also unlock anytime, anywhere access to digital twin simulations from across the globe with the new software-as-a-service DeltaV Simulation Cloud, saving time and money with subscription options and facilitating easier collaboration among experts.

Easier, more flexible I/O integration lowers capital costs and improves modernizations. Built-in cybersecurity remains a priority, with DeltaV version 15 being ISASecure SSA Level 1 certified, providing end-to-end cybersecurity across the whole system and at all levels.

Find more information at http://www.emerson.com.

Wideband Signal Level Control

Mini-Circuits continues to expand their selection of connectorized components covering wide operating bandwidths well into the mmWave range to support users' full signal chain. With an operating frequency range from 0.1 to 50 GHz, their new ZX76-50G-30-V+ digital step attenuator is an ideal solution for signal conditioning and gain control in test setups and assembled systems from 5G equipment to Satcom and Radar through Ka-Band, and more.

The ZX76-50G-30-V+ is a 50Ω Digital Step Attenuator that provides adjustable attenuation from 0 to 31.5 dB in 0.5 dB steps. The control is a 6-bit parallel interface, with a single positive supply voltage. The model is produced using a unique unibody case package for ruggedness and operation in tough environments.

Key Features:
- 0 to 31.5 dB attenuation
- 0.5 dB step size
- 6-bit parallel control interface
- Dual or single supply voltage
- Immune to latch up

Find more information at http://www.minicircuits.com.

Smartscope E7 Multisensor Metrology System with Intellicentric Optics

Optical Gaging Products manufactures optical and precision multisensor metrology systems for industrial quality control. They have announced the addition of SmartScope E7, the first in the all-new SmartScope E-Series family of 3D Multisensor Measurement Systems.

OGP has reimagined the trusted SmartScope system to be accessible for all skill levels and budgets. SmartScope E7 features the brand-new fixed lens IntelliCentric™ optical system, a fully telecentric optical system that provides a super high-resolution image perfect for video edge detection. The digital zoom allows for

instantaneous magnification changes, while the standard all-LED lighting system provides illumination from all angles.

The combination of an innovative optical design, advanced camera technology, and proprietary OGP image processing allows SmartScope E7 to have the same feature size range as other mechanical zoom optical systems, but with no moving parts. The engineering behind this machine has produced significantly better optical performance at low zoom, with better image quality, telecentricity, and distortion free imaging.

More information, machine specifications, and product videos is available at http://ogpnet.com/e7.

New 9 kV High Voltage PXI and LXI Switching Modules

Pickering Interfaces has launched new ranges of switching test modules that deliver high performance up to 9 kV. Their 4x-323 PXI range and 65-23x LXI range are available in various topologies such as multiplexers and smaller 'building block' uncommitted SPST switches, enabling complex test setups to be implemented. Hardware interlock is provided on all models in addition to loop-thru ports on multiplexer and matrix products to facilitate simple expansion.

The 40-323 (PXI) and 42-323 (PXIe) SPST high voltage power relay modules feature up to 14 high-quality Pickering reed relays per module. The modules can cold switch up to 9 kV DC/AC peak, hot switch up to 7.5 kV DC/AC peak at 50 Watts maximum and carry up to 250 mA.

The 65-23x LXI high voltage switch families are based on a 2U Ethernet-controlled modular chassis that can be configured with up to six plug-in switch modules. Each plug-in module can hold up to 50 high voltage relays with the same 9 kV specification as the PXI range mentioned above. There are three variants of the plug-ins:

In the 65-231 version, each plug-in is configured as a 1-pole multiplexer with various channel counts and bank quantities. These can be easily interconnected with external cables to form larger multiplexers up to 288 channels. The 65-233 version has up to 50 SPST uncommitted switches per plug-in for general-purpose HV applications.

All modules, both PXI and LXI, feature superior quality reed relays from Pickering's reed relay division, Pickering Electronics. The modules also include RFI suppression components to extend relay contact life and control surges caused by high voltage transients. Connections are made via Redel K or S series high voltage connectors.

For more information, please visit http://www.pickering test.com.

New 4-20 ma RTD Temperature Transmitter

Endress+Hauser's newly developed iTEMP TMT31 temperature transmitter for analog 4-20mA signals is characterized by its long-term stability, high accuracy, and ease of use, making it an important pillar for reliable temperature measurement. Temperature transmitters are an important link between temperature sensors in the field and higher levels of automation and analysis in the process industries.

The iTEMP TMT31 improves upon its RTD transmitter predecessors with better connection technology, available in two optimized formats. The first incorporates push-in terminals, enabling tool-free, secure field wiring in a matter of seconds. It is also available in the classic screw terminal format, with an optimized design that makes wire terminations in the connection head easier. Corrosion-free contacts ensure maximum reliability of measured value transmission for both connection variants.

For fast commissioning, users have the option to receive the TMT31 transmitter conveniently pre-configured from the factory, or to apply custom parameterization on site with free configuration software, such as Endress+Hauser FieldCare or DeviceCare. These software packages run conveniently on a host of operating systems, both on laptops and tablets. The USB configuration kits required for this, such as TXU10 or Commubox FXA291, are also available from Endress+Hauser as accessories.

The TMT31 is approved for safe operation in Zone 2 / Div. 2 hazardous areas (non-sparking) in accordance with ATEX and CSA C/US standards, along with Pt100 and Pt1000 sensors.

Find more information at http://www.endress.com.

Digitizers Now Offer Advanced FPGA-Based Averaging

A new firmware option has been created by Spectrum Instrumentation that allows the company's high-speed M5i digitizer cards to perform on-board summation averaging. Averaging is a useful tool for reducing unwanted signal noise, while at the same time improving measurement resolution, dynamic range, and signal-to-noise ratio (SNR). The new option enables the M5i digitizers to perform the averaging function by utilizing advanced, on-board, Field Programmable Gate Array (FPGA) technology.
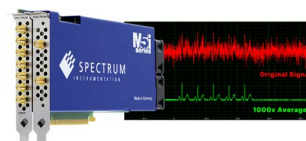
The M5i series digitizers deliver real-time sampling at rates up to 6.4 GS/s with 12-bit resolution and they can stream all the acquired data directly over the PCIe bus at 12.8 GB/s. This capability is then further enhanced by the new firmware option, which permits acquired signals to be averaged at 15 million events per second.

Summation Averaging is a common, time-domain-based, processing technique that is used to reduce the random (uncorrelated) noise component of a signal, improving its signal-to-noise ratio (SNR), while at the same time increasing a digitizer's measurement resolution and dynamic range.

Ideally, if the signal and noise are uncorrelated, i.e., the noise being random while the signal is repetitive, then the summation averaging function can improve the SNR in proportion to the square root of the number of measurements (or averages). For example, averaging a signal 256 times may improve the SNR by as much as 24 dB or increase measurement resolution by around 4 bits. As such, this technique can be used to improve and extend the 12-bit resolution of the M5i series digitizers.

More information about Spectrum can be found at http://www.spectrum-instrumentation.com.

High-Power E-Band Transceiver for 5G XHaul Applications

Filtronic has announced the launch of Morpheus X2, the latest generation of its E-band transceiver for carrier-grade applications in 5G backhaul, midhaul and fronthaul—collectively known as XHaul.

Morpheus X2 is the latest design based on Filtronic's proven E-band (71 to 76 GHz and 81 to 86 GHz) transceiver platform. Integrating all the RF transmit and receive functions required for an E-band radio link, the transceiver module offers a linear transmit power output of +23 dBm—3 dB higher than the standard Morpheus II product—while occupying the same compact footprint of 90 × 80 mm. Receiver noise figure is typically 7 to 8 dB, and an enhanced option with 4.5 to 5.5 dB noise figure is also available for specialized applications.

This higher power level enables longer link lengths when the modules are used in all types of mmWave XHaul applications. The compact form factor of the modules and their reconfigurable architecture also provide an ideal platform from which to develop ultra-high capacity payloads and ground systems for LEO satellite constellations and High Altitude Platform Systems (HAPS).
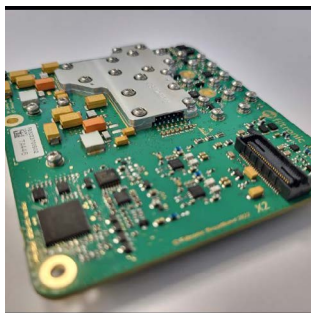
Dell'Oro Group has forecast that E-band mmWave radio links will experience the fastest growth of all the frequency bands over the five-year period to 2026, with the combined E-band and V-Band market predicted to grow at a compound annual growth rate (CAGR) of 25%. This growth is being driven by the global demand for XHaul for 5G networks, for which radio links in the mmWave bands can provide both high capacity and high data rate.

Find more information at http://www.filtronic.com.

VFDs Provides Flexible Motor Control and Energy Savings

IDEC Corporation now offers a new line of VF1A Doesa variable frequency drives (VFDs), providing versatile control and efficient operation of electrical motors for a wide range of applications.

VFDs are used to control the speed and torque of AC motors so users can optimize system performance by running equipment at just the speed required to meet the demand of the load. Furthermore, VFDs are configurable to accelerate and decelerate to commanded speed smoothly, reducing the wear and tear on associated mechanical components. Among the greatest of VFD benefits is the energy savings realized by running a motor at any speed below maximum, so long as the equipment needs are met.

IDEC VF1A Doesa VFDs are suitable for speed control of variable and constant torque applications ranging from fans and pumps to specialized equipment. The VFD can drive an induction motor (IM) or a permanent magnet synchronous motor (PMSM). IMs can be driven in open loop or closed loop, while PMSMs can be driven in open loop only

Electrical input is nominally rated as three-phase low voltage AC 400 V (with an allowable input voltage range of 380-480 V AC), and the VFDs come in 14 models with a capacity range of up to 139 A.

The VFD also includes seven digital inputs, two analog inputs, three digital outputs, and two analog outputs for added control functionality. A standard option port and RS-485 terminals are included, and the VFD accepts removable terminal cards for standard, 5V, and 12V/15V operation.

An on-board keypad provides convenient status and diagnostic monitoring, along with local configuration and control capability.

For complete specifications or additional information, please visit IDEC online at http://us.idec.com/c/VF1A_Series.

Cameras For High Accuracy 360-Degree Spherical Image Capture

Teledyne FLIR Integrated Imaging Solutions has announced the all new Ladybug6— the latest addition to its Ladybug series. Ladybug6 is a high-resolution camera designed to capture 360-degree spherical images from moving platforms in all-weather conditions. Its industrial grade design and out-of-the-box factory calibration produces 72 Megapixel (MP) images with pixel values that are spatially accurate within +/- 2 mm at 10-meter distance.

The new Ladybug6 builds on Teledyne's machine vision heritage with increased image resolution, enhanced on-board processing, and robust IP67-rated connectors. Building on the field proven Ladybug5+, the Ladybug6 captures, compresses, and transmits 8-bit or 12-bit pixel data delivering outstanding images across a wide range of lighting conditions with excellent color response, low noise, and a high dynamic range. Designed from the ground up to capture images from moving platforms in outdoor environments, the Ladybug6 features a wide operating temperature range (-30° C to 50° C), support for additional Global Navigation Satellite Systems, and trigger control by hardware or software with advanced APIs for complete camera control.

Key Features:

- Captures 72 Megapixel images with spatial accuracy of +/- 2 mm at 10-meter distance
- Frame rates of up to 29.9 FPS at 4K resolution, 15 FPS at 72 MP
- Wide operating temperature range of -30° C to 50° C
- IP65 rating with industrial grade IP67 rated connectors
- Support for additional Global Navigation Satellite Systems
- Excellent color response, low noise, and a high dynamic range
- Captures, compresses, and transmits 8-bit or 12-bit pixel data

- Feature rich and user-friendly Ladybug SDK
- All-metal body with 2-year warranty

For more information, visit http://www.teledyneflir.com/mv.

Compact Ethernet/IP Encoder

Wachendorff is expanding its range of Ethernet-based encoders: Encoders with the EtherNet/IP protocol are now available, including their most compact WDGA58F. Wachendorff's R&D team has succeeded in minimizing the sensor to an installation depth of just 46.5 mm.

The encoders are certified by the ODVA. The resolution in single and multi-turn can be individually configured via an integrated web server (single-turn 16 bit, multi-turn 43 bit).

The encoders can operate in a temperature range from -40 °C up to +85 °C, shock 1,000 m/s^2 or vibration 50 m/s^2 at 10-2000 Hz. This allows use in harsh industrial environments as well as in mobile working machines. The devices with hollow end shafts eliminate the need for additional couplings and the devices with shafts guarantee a long-lasting and stable connection with their very high bearing loads of up to 400 N.

More information about the EtherNet/IP encoders from Wachendorff can be found at https://www.wachendorff-automation.com/encoder-absolute-magnetic-ethernet-ip/.

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.