National Instruments Expands PXI Capabilities for Semiconductor Test With New Suite of Modular Instruments

Ten New DC, Digital, RF and Switching Products Deliver Increased Flexibility and Reduced Costs for Mixed-Signal Chip Test

NEWS RELEASE – Nov. 10, 2009 – National Instruments today introduced 10 new PXI products that expand the capabilities of PXI for mixed-signal semiconductor test. The suite of new software-defined products, which are optimized for use with NI LabVIEW graphical system design software, includes four high-speed digital I/O (HSDIO) instruments, two digital switches, two enhanced RF instruments, a high-precision source measure unit (SMU) and specialized digital vector file importing software. The new NI PXI Semiconductor Suite incorporates numerous new features including 200 MHz single-ended digital I/O, 10 pA current resolution, rapid multiband RF measurements, DC/digital switching and Waveform Generation Language (WGL) and IEEE 1450 Standard Test Interface Language (STIL) file importing capability.

The PXI Semiconductor Suite continues the enhancement of PXI capabilities for testing common semiconductor devices such as ADCs, DACs, power-management ICs, wireless ICs and microelectromechanical systems (MEMS) devices. Because of its breadth of advanced functionality, the suite delivers higher throughput, greater flexibility and faster development time compared to traditional box instrumentation and automatic test equipment (ATE) solutions often used for characterization, validation and production test of these semiconductor devices.

“The new suite of mixed-signal PXI instrumentation from National Instruments allows me to import WGL and STIL design vectors to validate digital protocols and critical timing parameters of our IC designs,” said David Whitley, evaluation engineer at Analog Devices, Inc. “PXI and LabVIEW provide us a flexible, mixed-signal characterization platform that we use to quickly configure custom tests and lower our overall product development time and evaluation costs.”

The NI PXIe-654x family of HSDIO instruments includes four new modules that offer single-ended clock rates up to 200 MHz and data rates up to 400 Mbps, making it possible for engineers to test high-speed chip designs and accommodate faster custom communication protocols. Advanced digital modules in this family include several additional features such as bidirectional communication, real-time bit comparison, double data rate capability, multiple timing delays for different I/O lines and the ability to select from 22 different voltage levels, from 1.2 to 3.3V, for

increased digital I/O test flexibility. These new digital I/O devices expand the NI PXI-654x, PXI-655x and PXI-656x series high-speed digital offerings to a total of 10 PXI instruments with single-ended and LVDS voltage capabilities up to 200 MHz.

The new NI PXI-4132 high-precision SMU delivers current sensitivity down to 10 pA for high-resolution current measurements. It features remote (four-wire) sensing and external guarding on a single output to provide up to ±100 V capability in a single PXI slot. The SMU also offers several other advancements including an onboard hardware sequencing engine for hardware-timed, high-speed curve traces and the ability to trigger and synchronize multiple PXI-4132 SMUs over the PXI backplane. The PXI-4132 complements the existing NI PXI-4130 power SMU, which provides a four-quadrant, 40 W output (±20 V, ±2 A) to deliver high-precision and high-power source measure options for PXI.

The new NI PXI-2515 and NI PXIe-2515 digital switches further enhance the suite of PXI products by helping engineers to multiplex precision DC instrumentation directly onto HSDIO lines connected to the chip under test. The new switches also provide improved signal connectivity for parametric measurements while maintaining signal integrity on high-speed digital edges.

The new NI PXIe-5663E and NI PXIe-5673E 6.6 GHz RF PXI Express vector signal analyzer and vector signal generator offer increased measurement speed through fast and deterministic changes in RF configurations using a new feature called RF List Mode to significantly reduce test time. The new functionality makes it possible for engineers to download preconfigured instrument parameters to rapidly cycle through different RF configurations. This is especially useful when testing power amplifiers and other RFICs that require verifying performance across multiple frequencies. This added functionality can help RF engineers perform multiband RF measurements significantly faster than with traditional instruments.

The PXI Semiconductor Suite also introduces a solution for efficiently importing WGL and STIL digital vector formats to streamline design-to-test integration when using NI PXI high-speed digital products. The result of collaboration between NI and Test Systems Strategies, Inc. (TSSI), the new TSSI TD-Scan for National Instruments software makes it possible for semiconductor test engineers to import WGL and STIL simulation vectors into PXI systems, a task which previously required custom software development. An evaluation version of the WGL/STIL software tool, which supports all NI PXI-654x, PXI-655x and PXI-656x HSDIO series of products, is available through www.ni.com. A full version is available for purchase directly from TSSI.

Readers can visit www.ni.com/automatedtest/semiconductor/suite.htm to learn more about the PXI Semiconductor Suite and how Analog Devices, Inc., and others are using PXI and LabVIEW to reduce their chip test costs.

About National Instruments
National Instruments (www.ni.com) is transforming the way engineers and scientists design, prototype and deploy systems for measurement, automation and embedded applications. NI empowers customers with off-the-shelf software such as NI LabVIEW and modular cost-

effective hardware, and sells to a broad base of more than 30,000 different companies worldwide, with no one customer representing more than 3 percent of revenue and no one industry representing more than 15 percent of revenue. Headquartered in Austin, Texas, NI has more than 5,000 employees and direct operations in more than 40 countries. For the past 10 years, FORTUNE magazine has named NI one of the 100 best companies to work for in America.

Pricing and Contact Information

NI PXIe-6544 100 MHz high-speed digital I/O generator/analyzer Priced* from $5,499; €5,049; ¥809,000 NI PXIe-6545 200 MHz high-speed digital I/O generator/analyzer Priced* from $6,999; €6,399; ¥1,029,000 NI PXIe-6547 100 MHz high-speed digital I/O generator/analyzer Priced* from $7,499; €6,849; ¥1,103,000 NI PXIe-6548 200 MHz high-speed digital I/O generator/analyzer Priced* from $8,999; €8,249; ¥1,323,000 NI PXI-4132 High Precision SMU Priced* from $3,499; €3,199; ¥515,000 NI PXI-2515 high-speed digital signal insertion switch Priced* from $2,499; €2,299; ¥368,000 NI PXIe-2515 high-speed digital signal insertion switch Priced* from $2,499; €2,299; ¥368,000 NI PXIe-5663E 6.6 GHz RF vector signal analyzer Priced* from $22,999; €21,049; ¥3,381,000 NI PXIe-5673E 6.6 GHz RF vector signal generator Priced* from $23,999; €21,949; ¥3,528,000 Web: www.ni.com/automatedtest/semiconductor/suite.htm **All prices are subject to change without notice.*	Contact Sales: www.ni.com/contact E-mail: info@ni.com

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