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# PRESS RELEASE

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## **National Instruments Releases Innovative Teaching Solution for University Educators**

### ***NI USRP-2920/21 Deliver Hands-On Experimentation to RF and Communications Labs***

**AUSTIN, Texas – Oct. 5, 2011** – National Instruments (Nasdaq: NATI) today announced the NI USRP-2920 and NI USRP-2921 instruments, offering a new educational platform that delivers a true hands-on learning experience with real-world signals to RF and communications university labs, which previously relied on computer-based simulation to augment theory. The new platform, consisting of NI universal software radio peripheral (USRP™) hardware, NI LabVIEW software and lab-ready course material, provides educators with an affordable, off-the-shelf solution that exposes students to practical application of abstract mathematical theories learned in traditional lecture.

“The USRP has gained popularity in recent years among universities as a research tool in software-defined and cognitive radio fields,” said Thad Welch, PhD, professor at Boise State University. “With LabVIEW support and course-specific lab materials, the NI USRP helps educators strengthen students’ understanding of RF and communications theory through hands-on experimentation.”

With this platform, students can now explore the link between abstract mathematical theory and practical implementation through hands-on experimentation with a working communications system. The NI USRP devices feature a software-tunable front end ranging from 50 MHz to 2.2 GHz or the 2.4 GHz and 5 GHz ISM bands. The hardware also integrates a software reconfigurable RF transceiver with high-speed A/D and D/A converters, which makes it possible to stream baseband I and Q signals to a host PC over Gigabit Ethernet at up to 20 MS/s for real-time access to the spectrum.

Undergraduates have already proven NI USRP technology as ideal for use in the lab as part of a pilot electrical engineering course at Stanford University. The spring 2011 class gained a deeper understanding of engineering concepts through hands-on projects in which they designed a complete communications system.

“We want to expose students to real-world signals early in their academic careers,” said Sachin Katti, assistant professor of electrical engineering and computer science at Stanford University. “With the NI USRP and LabVIEW, we can now provide this exposure in RF and communications courses for the first time, which adds depth to both teaching and learning theoretical concepts.”

Educators can use the NI USRP platform to teach courses and topics such as digital communications, communication system design, antenna theory, digital modulation, wireless communication, software-defined radio, digital signal processing and information theory. Additionally, the new USRP educational platform functions as a scalable solution for communications experimentation, research, and rapid prototyping.

Readers can learn more about the NI USRP platform by visiting [www.ni.com/usrp](http://www.ni.com/usrp).

### **About National Instruments**

Since 1976, National Instruments ([www.ni.com](http://www.ni.com)) has equipped engineers and scientists with tools that accelerate productivity, innovation and discovery. NI's graphical system design approach to engineering provides an integrated software and hardware platform that speeds the development of any system needing measurement and control. The company's long-term vision and focus on improving society through its technology supports the success of its customers, employees, suppliers and shareholders.

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