

**Editor Contact:** Hilary Marchbanks, (512) 683-5937  
**Reader Contact:** Ernest Martinez, (800) 258-7022

## **National Instruments Introduces Solution for Phase-Coherent RF Measurements** *Multichannel RF Signal Generators and Analyzers Are Ideal for 802.11n, LTE, WiMAX and MIMO Design and Test*

**AUSTIN, Texas – March 1, 2010** – National Instruments (Nasdaq: NATI) today introduced new RF vector signal generators (VSGs) and vector signal analyzers (VSAs) in two-channel, three-channel and four-channel versions for multichannel [multiple-input-multiple-output \(MIMO\)](#) RF design and test applications. The [NI PXIe-5663E](#) 6.6 GHz two-, three- and four-channel RF VSA and [NI PXIe-5673E](#) 6.6 GHz two-, three- and four-channel RF VSG versions, based on [PXI Express](#), incorporate a shared local oscillator (LO) architecture to achieve true phase coherency between each RF port, which facilitates more accurate channel-to-channel phase measurements in a variety of [RF test](#) applications. Because of this and other advanced features, the instruments are ideal for prototyping and testing multichannel MIMO wireless devices such as those built for [WiMAX](#), Long Term Evolution (LTE), 802.11n and other next-generation wireless communication standards.

Systems based on the new NI multichannel VSGs and VSAs combine [NI LabVIEW graphical system design software](#) with modular NI [PXI](#) instrumentation. These instruments complete an integrated software-defined, phase-coherent measurement system for MIMO, direction finding, radar test and beamforming applications that require channel-to-channel RF port synchronization. For engineers with existing NI PXI RF systems, the instruments' software helps to configure NI PXI hardware to their individual prototyping requirements.

"The RF instrumentation from National Instruments has been an excellent, cost-effective solution for our four-channel record-and-playback system," said Steve Seiden, vice president of Cal-Bay Atlantic, a leading RF device manufacturer. "Using LabVIEW example code and PXI modular instruments from NI, we configured each channel to be completely phase-coherent. Our system, based on the NI PXIe-5663 6.6 GHz four-channel RF VSA, implemented a common local oscillator between modules to achieve better than 0.1 degree channel-to-channel jitter at a 1 GHz carrier frequency. We are very pleased with these results."

NI multichannel RF VSGs and VSAs provide a commercial off-the-shelf solution to engineers seeking a flexible, cost-effective alternative to the high cost and high complexity of traditional MIMO instrument configurations. By combining LabVIEW software with PXI modular RF hardware into a single integrated system, multichannel PXI RF instrumentation delivers an ideal solution in a compact form factor. This system saves engineers time and money because it is preconfigured to meet advanced MIMO prototyping and test requirements, helps reduce power consumption and eliminates the time-intensive troubleshooting involved with configuring proprietary MIMO development and test systems.

The multichannel VSGs and VSAs are available with a wide selection of modular PXI Express instrumentation that engineers can customize for each application, providing the option to purchase only the instruments that meet their needs. The standard package includes a two-, three- or four-channel NI PXIe-5673 RF VSG or NI PXIe-5663 RF VSA. With the compact configuration of the PXI instrumentation, a standard 18-slot PXI chassis can accommodate both a four-channel VSA and a two-channel VSA. In addition, phase-coherent RF test systems are scalable, accommodating up to 16-by-16 MIMO configurations using multiple PXI chassis. The system also includes ready-to-use LabVIEW example code, which supports multichannel signal generation and acquisition in a ready-to-run experience.

To view a video about NI MIMO solutions, readers can visit [www.ni.com/automatedtest/mimo](http://www.ni.com/automatedtest/mimo).

### **About National Instruments**

National Instruments ([www.ni.com](http://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 11 years, FORTUNE magazine has named NI one of the 100 best companies to work for in America. Readers can obtain investment information from the company's investor relations department by calling (512) 683-5090, e-mailing [nati@ni.com](mailto:nati@ni.com) or visiting [www.ni.com/nati](http://www.ni.com/nati).

### **Pricing and Contact Information**

NI PXIe-5663E 6.6 GHz Vector Signal Analyzer

Priced\* from \$22,999; €21,099; ¥3,220,000

NI PXIe-5673E 6.6 GHz Vector Signal Generator

Priced\* from \$23,999; €21,999; ¥3,360,000

Web: [www.ni.com/automatedtest/mimo](http://www.ni.com/automatedtest/mimo)

*\*All prices are subject to change without notice.*

11500 N Mopac Expwy, Austin, Texas 78759-3504

Tel: (800) 258-7022, Fax: (512) 683-9300

E-mail: [info@ni.com](mailto:info@ni.com)

*LabVIEW, National Instruments, NI and ni.com are trademarks of National Instruments. Other product and company names listed are trademarks or trade names of their respective companies.*

###