



National Instruments Germany GmbH
Ganghoferstraße 70 b • 80339 München
Tel.: 089 7413130 • Fax: 089 7146035

PRESS RELEASE

Editor Contact:

Rahman Jamal, Technical & Marketing Director Europe
Silke Loos, Team Leader Communications & Media Relations
Tel.: +49 89 7413130
Fax: +49 89 7146035

NI FPGA-Based Control System to Revolutionize Smart-Grid Power Electronics Commercialization

News Highlights

- The new NI Single-Board RIO General Purpose Inverter Controller (GPIC) enables a revolutionary new embedded system design approach for the rapid deployment of advanced, field-reconfigurable digital energy conversion systems.
- The high-level graphical system design platform and standard reconfigurable I/O (RIO) FPGA-based control system empower companies to in-source their designs without any knowledge of register level languages such as Verilog and VHDL.

AUSTIN, Texas – NIWeek – August 9, 2012 – National Instruments (Nasdaq: NATI) today announced the NI Single-Board RIO GPIC, which provides a standard RIO architecture for smart, grid-tied power conversion systems with a comprehensive NI LabVIEW system design toolchain that significantly reduces the cost and risk of embedded system design. This product reflects the ongoing investments by NI R&D to revolutionize the design, testing and large-scale deployment of new digital energy conversion systems. The new system provides a standard set of analog and digital I/O and 58 DSP cores embedded in the FPGA fabric to meet the specific control, I/O, performance and cost needs of most smart-grid power electronics applications, including DC-to-AC, AC-to-DC, DC-to-DC and AC-to-AC converters for flexible AC transmission systems, renewable energy generation, energy storage and variable speed drive applications.

Quotes

“NI programming tools actually allow engineers to program the control strategy at the FPGA level, which is the clear path for the future,” said Dr. Bill Kramer, acting R&D manager for energy systems integration technology at the National Renewable Energy Laboratory. “Imagine yourself being able to write multiple control strategies that run in parallel to create new power electronics designs than can be reconfigured at the hardware level after years of deployment on the grid.”

NI Single-Board RIO GPIC Features

- Prevalidated, deployment-ready embedded system with complete set of analog and digital I/O for rapid deployment of advanced FPGA-based power electronics control systems
- Comprehensive graphical system design toolchain with high-fidelity power electronics circuit simulator for rapid development and verification of user-defined LabVIEW FPGA control algorithms
- 58 DSP core hardware parallel Xilinx Spartan-6 FPGA that outperforms typical dual-core DSPs by a factor of 40x, 24x and 10x, with regards to performance per dollar, per chip and per watt, respectively
- Embedded 400 MHz PowerPC processor with VxWorks real-time OS supports smart-grid networking protocols DNP3, IEC 60870-5 and IEC 61850, onboard COMTRADE (IEEE 37.111) data logging, and standard three-phase IEC, EN and IEEE power quality analysis

Learn more about the NI vision for power electronics with these additional resources:

- NI Single-Board GPIC Overview: <http://www.ni.com/gpic/>
- Product Page: <http://sine.ni.com/nips/cds/view/p/lang/en/nid/210889/>
- Power Electronics Development Center: www.ni.com/powerdev

About National Instruments

Since 1976, National Instruments (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.

Reader Contact:

Germany:

National Instruments Germany GmbH
Ganghoferstraße 70 b • 80339 München
Tel.: +49 89 7413130 • Fax: +49 89 7146035
info.germany@ni.com • ni.com/germany

Austria:

National Instruments GesmbH
Plainbachstr. 12 • 5101 Salzburg-Bergheim
Tel.: +43 662 457990-0 • Fax: +43 662 457990-19
ni.austria@ni.com • ni.com/austria

Switzerland:

National Instruments Switzerland Corp. Austin,
Zweigniederlassung Ennetbaden
Sonnenbergstr. 53 • 5408 Ennetbaden
Tel.: +41 56 2005151 • Fax: +41 56 2005155
ni.switzerland@ni.com • ni.com/switzerland