National Instruments Introduces X Series Multifunction DAQ for USB

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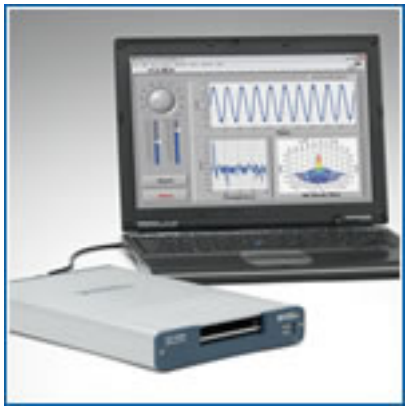
Eight New USB Devices Offer Enhanced Digital Functionality and Simultaneous Sampling Options



NEWS RELEASE Aug. 4, 2010 National Instruments today announced NI X Series multifunction data acquisition (DAQ [1]) devices for USB. USB X Series [2] devices integrate high-performance analog measurement and control channels, digital I/O and counter/timers onto a single plug-and-play device, which engineers and scientists can use for a wide variety of portable test, measurement and data-logging applications. USB X Series DAQ devices include up to 32 analog inputs, four analog outputs, 48 digital I/O lines and four counters. The eight new devices range from 500 kS/s multiplexed AI to 2 MS/s/channel simultaneous sampling AI.

NI LabVIEW [3] graphical programming makes it easy for engineers and scientists to develop completely custom test and measurement applications for USB X Series using intuitive graphical icons and wires that resemble a flowchart. LabVIEW 2010 [4] simplifies data logging and analysis with a new technical data management streaming option within the NI DAQ Assistant and the ability to export data from a waveform graph to Microsoft Excel or NI DIAdem [5] for post processing. USB X Series devices use the same multithreaded NI-DAQmx driver software as other National Instruments DAQ devices, making it easy to port LabVIEW or text-based code from previous applications for use with X Series.

USB X Series devices include two key technologies that make them as powerful as they are easy to use: NI-STC3 technology for advanced timing and triggering and NI Signal Streaming for high-speed, bi-directional data streaming.

At the core of all USB, PCI Express and PXI Express [6] X Series devices is NI-STC3 timing and synchronization technology, which coordinates the timing and triggering of the analog, digital and counter subsystems. NI-STC3 technology provides X Series devices with independent timing engines for the onboard analog and digital I/O subsystems, making it possible for analog and digital I/O to execute independently at different rates or together with synchronization. X Series devices include four enhanced 32-bit counters for frequency, pulse-width modulation (PWM) and encoder operations, as well as a new 100 MHz timebase that can generate analog and digital sampling rates with five times better resolution than previous devices.

USB X Series devices include NI Signal Streaming, a patented technology that uses message-based transfers and device-side intelligence to deliver high-speed, bidirectional data transfer over USB, making it possible to perform analog, digital and counter operations concurrently. With this technology, simultaneous sampling now is available on two new devices, which can sample at 1.25 MS/s and 2 MS/s on each of their eight analog inputs. These devices are available with 32 or 64 MS onboard memory to guarantee finite acquisitions even with heavy USB traffic. The high sampling rates on all channels make these devices well suited for portable ultrasonic test and transient recording applications.

Each USB X Series device features a redesigned, extruded aluminum enclosure. The new enclosure offers an easy-access lid to keep signal wiring secure and shielded, and device-specific pinout labels on the lid make it possible to quickly determine the corresponding screw terminals for a given channel. The enclosure also includes a lockable USB port to prevent accidental removal during operation.

To see specifications, pricing and demonstration videos for the new USB X Series, readers can visit www.ni.com/xseries/usb [2].

SOURCE [7]

SOURCE [8]

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