Large-Scale Experimental Research

High-End Data Acquisition, Datalogging, and Control

Reliable data acquisition and control solutions for:

- Performing demanding measurements across many channels for beam position monitoring
- High speed signal processing for closed loop control
- Customized tokamak diagnostics
- Single-shot, high-value data acquisition for high-energy applications

Accelerate Scientific Discovery with a Customizable Off-the-Shelf Platform

Scientists need higher particle energies and plasma power to conduct large-scale, groundbreaking research. Customizing commercial off-the-shelf (COTS) systems enables engineers to build unique measurement, diagnostic, and control systems that are highly available and cost effective.

Accelerator and tokamak measurement and control systems require a broad range of I/O, signal processing, and connectivity. And engineers must deliver these systems while balancing costs, tight schedules, and reliability metrics.

NI's software-defined COTS platform uses state-of-the-art components and subsystems to deliver reliable and cost-effective solutions for your applications. For decades, researchers and scientists have relied on NI's modular instrumentation and application software to help them work better, smarter, and faster to achieve their goals from design to production.

ni

PXI Oscilloscope and Multifunction I/O Instruments

Use these modules to develop systems that scale to multiple channels with varying sample and output rates, with precise timing, triggering, and synchronization across modules.

Bundle Options

Sensor Type	Bundle Name	Part Number
Digitizer	Expandable PXI Scope Bundle: 60 MHz Bandwidth, 8ch	867010-01
Digitizer	Expandable PXI Scope Bundle: 100 MHz Bandwidth, 2ch	867011-01
Digitizer	Expandable PXI Scope Bundle: 100 MHz Bandwidth, 8ch	867014-01
Digitizer	Expandable PXI Scope Bundle: 350 MHz Bandwidth, 2ch	867012-01
Digitizer	Expandable PXI Scope Bundle: 500 MHz Bandwidth, 2ch	867013-01
Digitizer	Expandable PXI Scope Bundle: 1.5 GHz MHz Bandwidth, 4ch	867015-01
Multifunction I/O	Expandable PXI MIO Bundle: 80ch AI, 2ch AO, 24ch DIO	867123-03
Multifunction I/O	Expandable PXI MIO Bundle: 32ch AI, 4ch AO, 48ch DIO	867124-03

Real-Time Monitoring and Control with CompactRIO

CompactRIO systems provide high-performance processing capabilities, sensor-specific conditioned I/O, and a closely integrated software toolchain that make them ideal for monitoring and control applications. The real-time processor offers reliable, predictable behavior, while the FPGA excels at smaller tasks that require high-speed logic and precise timing.

Unlock the Full Potential with NI Software

LabVIEW has what you need to build automated measurement and control systems, fast. LabVIEW is a graphical programming environment with thousands of analysis functions; configurable, interactive display element; drivers for automating every instrument and DAQ hardware; connectivity to other languages and industry-standard tools like EPICS and Tango.

LabVIEW

Make sure to add LabVIEW to your cart along with the PXI bundle before checkout.