NI PXI Systems
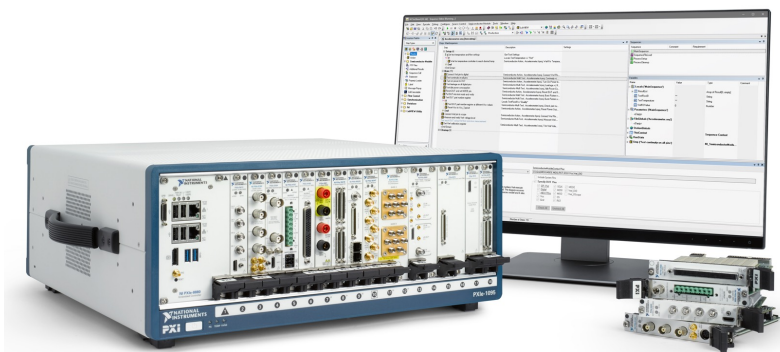
Achieve high accuracy, high productivity, and higher speeds with the standard for automated test and automated measurement: NI PXI.

Use PXI for:

- Tightly synchronized applications
- High-channel-count test applications
- Mixed measurement applications
- Device validation
- Automated manufacturing production test

Popular Features

Performance

Total throughput of 24 GB/s

Accuracy

Synchronization accuracy <250 ps

Flexibility

More than 600 PXI modules available

What Is NI PXI?

NI PXI systems provide high-performance modular instruments and other I/O modules that feature specialized synchronization and key software features for test and measurement applications from device validation to automated production test. NI is the PXI industry leader, with the broadest array of best-in-class products and services on the market.

Industry-Standard

NI led the creation of the PXI standards body to create an open standard, so you can augment your NI system with specialty modules from up to 60 other vendors.

High-Performance

NI PXI hardware utilizes the latest technology, incorporating powerful multicore processors, FPGAs, and other technology to increase measurement range and performance.

Scalable

PXI's architecture makes it possible to synchronize measurements across multiple modules or multiple chassis, so you can add to your systems as requirements change.

Accurate

PXI offers some of the highest frequency and accuracy specifications, so you can ensure your test systems deliver the production test results you need.

Chassis

Options
- Controlled by embedded controller or external PC
- Chassis size options from 2 to 18 slots
- Hybrid slots for instrumentation flexibility

Features
- Up to 8 GB/s per-slot dedicated bandwidth
- Up to 82 W per slot of power and cooling for more advanced I/O modules
- System monitoring for voltage rails, temperature, and fan speed

Embedded Controllers

Options
- Latest high-performance Intel processors
- Windows 7 ,Windows 10, and LabVIEW Real-Time.
- TPM 1.2 and TPM 2 (Trusted Platform Module)

Features
- Up to 24 GB/s system bandwidth
- Solid State drives, Thunderbolt™ 3, USB 3.0, Gigabit Ethernet, and other peripheral ports.

PXI Instrumentation

NI offers more than 600 different PXI modules ranging from DC to mmWave. Because PXI is an open industry standard, nearly 1,500 products are available from more than 70 different instrument vendors. Combined with a chassis and controller, PXI systems feature high-throughput data movement using PCI Express bus interfaces and sub-nanosecond synchronization with integrated timing and triggering.

Oscilloscopes
- Sample at speeds up to 12.5 GS/s
- 5 GHz of analog bandwidth
- Numerous triggering modes
- Deep onboard memory

Digital Multimeters
- Voltage measurements up to 1,000 VDC
- Current measurements up to 3 A
- Resistance measurements up to 5 GΩ
- Isolated Digitizer mode up to1.8 MS/s

Digital Instruments
- 32-channel module (up to 512 per chassis)
- 100 MHz vector rate, 39 ps displacement
- Digital voltage -2 V to 6 V,
- PPMU force voltage -2 V to 7 V

Waveform Generators
- Up to two 16-bit channels per module
- 800 MS/s with 20, 40, and 80 MHz bandwidth
- Up to 34 channels to build parallel
- Max ±12 V and min ± 7.75 mV output ranges

Frequency Counters
- Up to eight 32-bit counter/timers
- TTL/CMOS-compatible digital I/O
- high-speed simultaneous DMA transfers
- Onboard high-precision oscillators

Source Measure Units
- Up to 24 channels (408 per chassis)
- Max power per channel of 40W (500 W pulse)
- Up to 200 V and 3 A (10 A pulse)
- Current sensitivity of .01 pA

Power Supplies & Loads
- Two isolated, 60 W channels per module
- Hardware timing and triggering
- Output disconnect relays
- Four-wire remote sense

Custom Instruments
- LabVIEW-programmable Xilinx FPGAs
- Analog I/O, Digital I/O up to 6.4 GS/s, 1 Gbps
- RF I/O up to 4.4 GHz
- Data streaming up to 7 GB/s

Switches(Matrix & MUX)
- Electromechanical, Reed, solid state, FET
- Up to 150 V or 2 A
- Up to 544 cross points in a single PXI slot
- 1- and 2-wire options

Vector Signal Transceivers
- Up to 1GHz instantaneous bandwidth and 44 GHz center frequency
- Up to 32 In/Out RF channels
- Better than -50 dB EVM performance

GPIB, Serial, & Ethernet
- Integrate non-PXI instruments into a PXI system
- Common instrument interfaces supported

Data Acquisition Modules
- Voltage measurements up to 10 MS/s/ch
- Multiplexed or simultaneous analog architectures
- Up to 4 analog output and 4 counters/timers
- Analog, Digital and Counter/Timer in one device

Improve Test Performance with NI Software

Build an Automated Test System with LabVIEW

- **Acquire data** from NI hardware, 3rd party instruments, and many industry-standard protocols

- **Create interactive UIs** for test monitoring and control.

- **Process** with standard math, probability, and statistical functions.

- **Integrate code** written in Python, C/C++, .NET, and MathWorks MATLAB® software.

- **Save data** to .csv, .tdms, or any custom-defined binary file.

Upgrade to a Test Workflow Bundle to:

- **Create** automated test sequences with TestStand

- **Perform** data acquisition and logging with FlexLogger™ software

- **Build** web applications for test with G Web Development Software

- **Interactively analyze** your data with Diadem

Or Develop in Your Preferred Programming Language

## Drivers for each language:

- Python

- C, C+, C#

- .NET

- MATLAB® (Contact MathWorks® for the Data Acquisition Toolbox)

MATLAB is a registered trademark of The MathWorks, Inc.
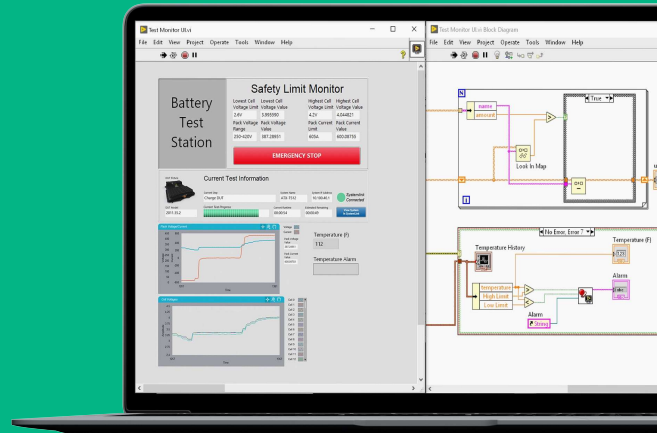
"The move to a COTS approach using PXI and LabVIEW was critical to this production-test success at Philips. The combination of best-in-class modular hardware along with industry-standard software was pivotal to the millions of dollars and hundreds of hours saved in production test engineering"

-Neil Evans
Senior Manager, Philips
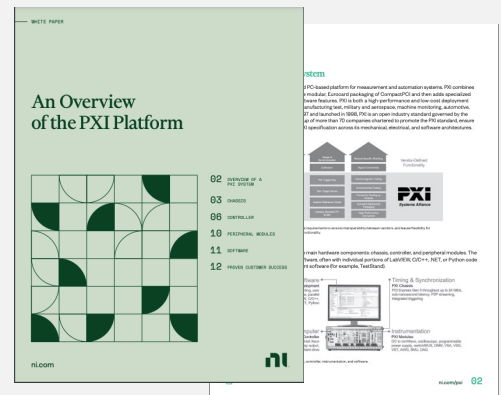
Check out this [Overview of the PXI Platform](#) to learn more

Contact your local partner to configure system today.

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