EMERSON

PRODUCT BROCHURE

PXI Chassis

Contents

NI PXI Chassis

NI PXI chassis offer:

- Up to 24 GB/s system bandwidth and 8 GB/s per-slot of dedicated bandwidth
- Size options ranging from 2 to 18 slots
- Hybrid slots for instrumentation flexibility; compatibility with PXI, PXI Express, CompactPCI, and CompactPCI Express modules
- Up to 82 W per slot of power and cooling for more advanced I/O modules
- High-reliability options with redundant power supplies and fans
- System monitoring features for voltage rails, temperature, and fan speed

Key Features

Timing and synchronization—NI PXI Express (PXIe) chassis incorporate a dedicated 10 MHz system reference clock, PXI trigger bus, star trigger bus, and slot-to-slot local bus, as well as a 100 MHz differential system clock, differential signaling, and differential star triggers for advanced timing and synchronization.

Peer-to-peer streaming—Use NI PXI Express chassis and software for peer-to-peer communication from a modular instrument to an FPGA module for inline signal processing that bypasses the PXI embedded controller.

Cooling—All NI PXI Express chassis exceed PXI Express requirements by providing at least 38.25 W of power and cooling to every peripheral slot; some chassis push slot cooling capacity even further by providing 58 W or 82 W of cooling to a single slot.

NI PXI: Built for Automated Test and Measurement

PXI offers engineers high performance while reducing test time and cost compared to traditional box instruments. The combination of modularity and software connectivity is ideal for advanced test applications that require precise, large-channel count, mixed-measurement solutions.

Best for:

- High-channel, high-speed test applications
- Combining instruments, sensors, and electrical measurements
- Automated validation test
- Production test systems for electronic devices

NI PXI Chassis Portfolio

NI offers PXI Express chassis ranging from 2 to 18 slots, delivering up to 24 GB/s of system bandwidth to meet a wide range of test requirements.

Selection Guide	Model	Part Number	Chassis Power-Supply Type	Max System Bandwidth	Slot Cooling Capacity	Onboard Clock Type	Slot Count	External Clocking	External Trigger Access
Entry-Level, Low Slot Count	NI PXIe-1071	781368-01	AC	3 GB/s	38 W	VCXO	Total: 4 Controller: 1 Hybrid: 3 PXI Express: 0 System Timing: 0	—	—
	NI PXIe-1073	781163-01	AC	250 MB/s	38 W	VCXO	Total: 5 Controller: 0 Hybrid: 3 PXI Express: 2 System Timing: 0	—	—
	NI PXIe-1090	787040-01	AC	2 GB/s	58 W	VCXO	Total: 2 Controller: 0 Hybrid: 1 PXI Express: 1 System Timing: 0	✓	—
	NI PXIe-1083	787026-01	AC	2 GB/s	58 W	VCXO	Total: 5 Controller: 0 Hybrid: 5 PXI Express: 0 System Timing: 0	—	—
Entry-Level or Prior Generation, Medium and High Slot Count	NI PXIe-1081	790631-01	AC	2 GB/s	58W	VCXO	Total: 18 Controller: 1 Hybrid: 17 PXI Express: 0 System Timing: 0	—	—
	NI PXIe-1084	784058-01	AC	4 GB/s	58 W	VCXO	Total: 18 Controller: 1 Hybrid: 17 PXI Express: 0 System Timing: 0	—	—
		786397-01						✓	✓
	NI PXIe-1085	783588-01	AC	24 GB/s	38 W	VCXO	Total: 18 Controller: 1 Hybrid: 16 PXI Express: 0 System Timing: 1	✓	—
	NI PXIe-1086	781720-01	AC	12 GB/s	38 W	VCXO	Total: 18 Controller: 1 Hybrid: 16 PXI Express: 0 System Timing: 1	✓	—
	NI PXIe-1086DC	787137-01	DC	12 GB/s	38 W	VCXO	Total: 18 Controller: 1 Hybrid: 16 PXI Express: 0 System Timing: 1	✓	—
	NI PXIe-1088	784782-01	AC	8 GB/s	58 W	VCXO	Total: 9 Controller: 1 Hybrid: 8 PXI Express: 0 System Timing: 0	—	—
Highest Performance, Newest-Generation, Highest Cooling Capacity	NI PXIe-1092	784781-01	AC	24 GB/s	82 W	VCXO	Total: 10 Controller: 1 Hybrid: 7 PXI Express: 0 System Timing: 1 Expansion: 1	—	—
		786991-01				OCXO		✓	✓
	NI PXIe-1095	783882-01	AC	24 GB/s	82 W	VCXO	Total: 18 Controller: 1 Hybrid: 5 PXI Express: 11 System Timing: 1	—	—
		785971-01				OCXO		✓	✓

PXI Chassis Accessories

PXI Chassis Power Cords

Region / Voltage	Length (m)	Max Current (A)	Part Number
United States 120 VAC	2.3	10	763000-01
United Kingdom 240 VAC	2.5		763064-01
Switzerland 220 VAC			763065-01
Australia 240 VAC			763066-01
Europe 240 VAC, Right Angle			763067-01
North America 240 VAC	3		763068-01
Japan 125 VAC	2.3	12	786377-01
India 250 VAC	2.5	10	763072-01
Korea 220 VAC, Right Angle			784685-01
China 220 VAC			784686-01
Brazil 250 VAC			785626-01
Taiwan 125 VAC		15	787642-01

MXI-Express Cable

Part Number	779500-01	779500-03	779500-07
Description	MXI-Express Cable, Gen 1 X1, Copper, 1 m	MXI-Express Cable, Gen 1 X1, Copper, 3 m	MXI-Express Cable, Gen 1 X1, Copper, 7 m
PXIe-1073	✓	✓	✓

PXI Chassis Trigger Cable

Part Number	149055-0R2
Description	Chassis D-SUB Trigger Breakout Cable To 6 BNC For PFI 0-3, Remote Inhibit and Fault, 20 cm
PXIe-1084	✓
PXIe-1092 Timing and Synchronization (786991-01)	✓
PXIe-1095 Timing and Synchronization (785971-01)	✓

PXI Rack-Mount Kit

Part Number	788347-01	778948-01	778644-01	778644-02	787525-01	781634-01	786371-01	786372-01	786969-01	786970-01
Description	PXIe-1090 Chassis Rack-Mount Kit	PXI-103X and 107x Rack-Mount Kit	PXI 18-Slot Front Rack-Mount Kit	PXI 18-Slot Rear Rack-Mount Kit	Rack-Mount Kit For PXIe-1088	Rack-Mount Kit For PXIe-1078 and PXIe-1088 (Legacy)	PXI 18-Slot Front Rack-Mount Kit, Extended Recess	PXI 18-Slot Rear Rack-Mount Kit, Extended Recess	PXIe-1092 Chassis Front Rack-Mount Kit, Extended Recess	PXIe-1092 Chassis Rear Rack-Mount Kit, Extended Recess
PXIe-1090	✓	—	—	—	—	—	—	—	—	—
PXIe-1071	—	✓	—	—	—	—	—	—	—	—
PXIe-1083	—	✓	—	—	—	—	—	—	—	—
PXIe-1073	—	✓	—	—	—	—	—	—	—	—
PXIe-1086DC	—	—	✓	✓	—	—	—	—	—	—
PXIe-1086	—	—	✓	✓	—	—	—	—	—	—
PXIe-1088	—	—	—	—	✓	✓	—	—	—	—
PXIe-1081	—	—	—	—	—	—	✓	✓	—	—
PXIe-1084 Timing and Synchronization (786397-01)	—	—	—	—	—	—	✓	✓	—	—
PXIe-1084	—	—	—	—	—	—	✓	✓	—	—
PXIe-1085	—	—	✓	✓	—	—	—	—	—	—
PXIe-1092 Timing and Synchronization (786991-01)	—	—	—	—	—	—	—	—	✓	✓
PXIe-1095	—	—	—	—	—	—	✓	✓	—	—
PXIe-1095 Timing and Synchronization (785971-01)	—	—	—	—	—	—	✓	✓	—	—

Thunderbolt™ 3 Male-to-Male Cable

Part Number	785607-02	785608-02	787580-0R8
Description	Thunderbolt 3 Type-C Cable, Active 40 Gb/S, 3 A, 2 m	Thunderbolt 3 Type-C Cable, Passive 20 Gb/S, 5 A, 2 m	Thunderbolt 3 Type-C Cable, Passive 40 Gb/S, 5 A, 0.8 m
PXIe-1090	✓	✓	✓
PXIe-1083	✓	✓	✓

HDMI Trigger Cable

Part Number	148864-01	148864-02	149055-0R2
Description	HDMI Cable for Trigger Routing (1 m)	HDMI Cable for Trigger Routing (2 m)	Chassis Trigger Breakout Cable (0.2 m)
PXIe-1084 Timing and Synchronization (786397-01)	✓	✓	✓
PXIe-1092 Timing and Synchronization (786991-01)	✓	✓	✓
PXIe-1092	✓	✓	✓
PXIe-1095	✓	✓	✓
PXIe-1095 Timing and Synchronization (785971-01)	✓	✓	✓

Power Supply Replacement

Part Number	782106-01	782107-01	784057-01	781719-01	786300-01
Description	Replacement Power Supply for PXIe-1066DC and PXIe-1086DC	Replacement Power Supply for PXIe-1066DC and PXIe-1086DC—for EU	Power Supply Filler Panel for PXIe-1066DC and PXIe-1086DC	Replacement Power Supply for PXIe-1085	Upgrade/ Replacement Power Supply for PXIe-1092 or PXIe-1095
PXIe-1086DC	✓	✓	✓	—	—
PXIe-1086	✓	✓	✓	—	—
PXIe-1085	—	—	—	✓	—
PXIe-1092 Timing and Synchronization (786991-01)	—	—	—	—	✓
PXIe-1092	—	—	—	—	✓
PXIe-1095	—	—	—	—	✓
PXIe-1095 Timing and Synchronization (785971-01)	—	—	—	—	✓

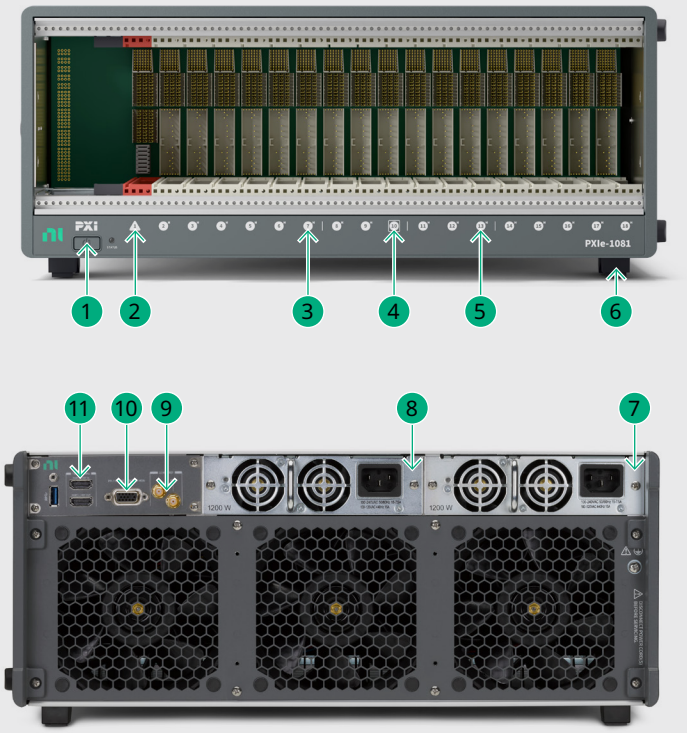
Fan Replacement Kits

Part Number	784854-01	786324-02	786972-01	786324-01
Description	Chassis Fan Replacement Kit for PXIe-1078 and PXIe-1088	Replacement Fan Assembly for PXIe-1081 and PXIe-1084	Fan Replacement Kit for PXIe-1092 Chassis	Replacement Fan Assembly for PXIe-1095
PXIe-1088	✓	—	—	—
PXIe-1081	—	✓	—	—
PXIe-1084 Timing and Synchronization (786397-01)	—	✓	—	—
PXIe-1084	—	✓	—	—
PXIe-1092	—	—	✓	—
PXIe-1092 Timing and Synchronization (786991-01)	—	—	✓	—
PXIe-1095	—	—	—	✓
PXIe-1095 Timing and Synchronization (785971-01)	—	—	—	✓

NI PXI Carrying Case

Part Number	780398-01
Description	PXI Carrying Case for Midsize Chassis (10 Slots or Fewer)
PXIe-1083	✓
PXIe-1073	✓
PXIe-1071	✓
PXIe-1088	✓
PXIe-1092 Timing and Synchronization (786991-01)	✓
PXIe-1092	✓

Detailed View



1. Power switch
2. System controller slot
3. PXI hybrid slot
4. System timing slot
5. PXI Express slot
6. Removable feet
7. Removable power supply
8. Second, optional power supply
9. 10 MHz FEF in/out SMA
10. Remote inhibit and fault monitoring
11. External triggering

Figure 1. Detailed view of the PXIe-1095 chassis (layout may vary by PXI chassis model).

Key Features

Timing and Synchronization Quality

A primary advantage of a PXI system is its integrated timing and synchronization capabilities. An NI PXI Express chassis features a 10 MHz reference clock, PXI trigger bus, star trigger bus, local slot-to-slot bus, a 100 MHz differential system clock, differential signaling, and differential star triggers for advanced timing and synchronization.

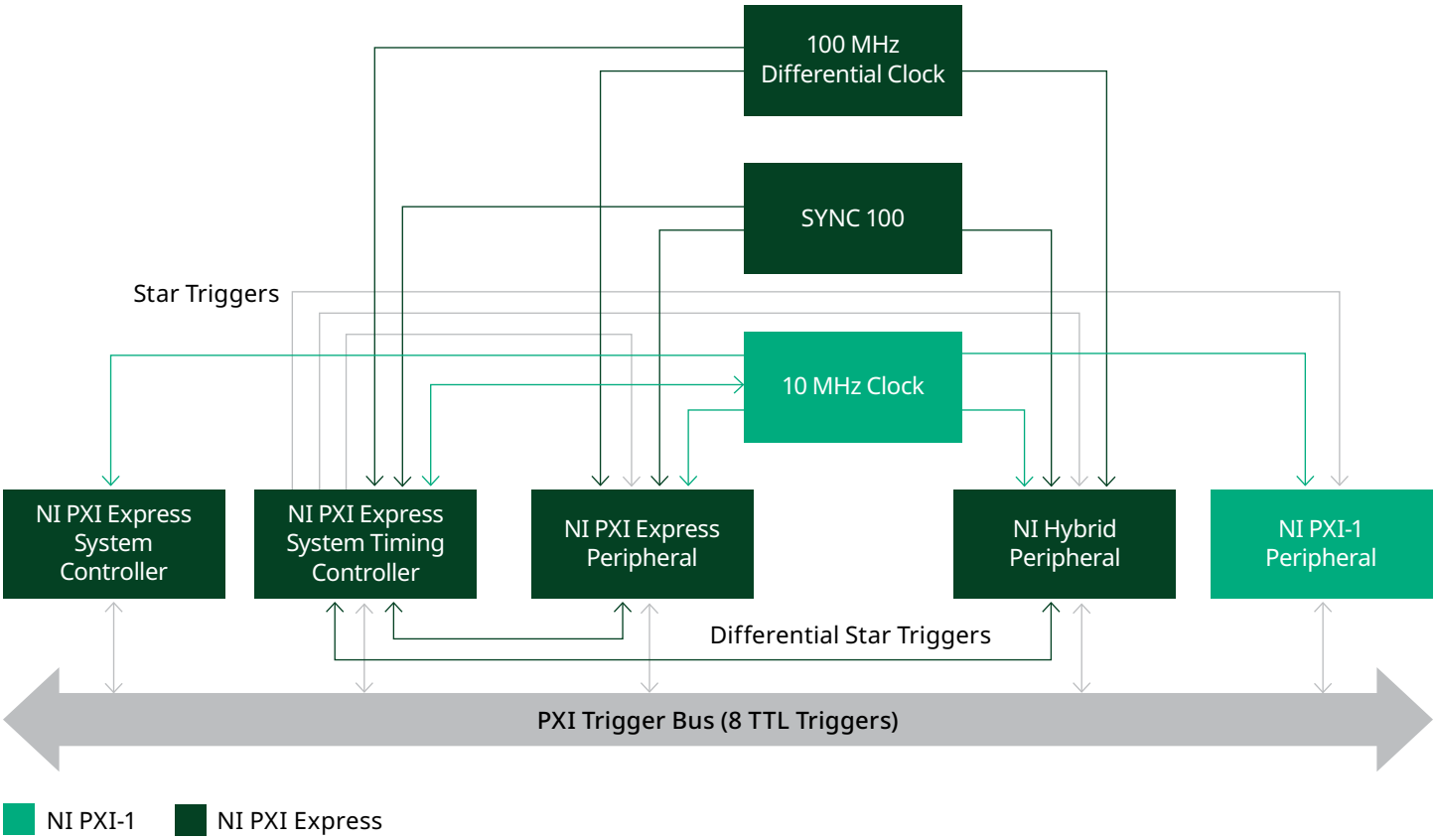


Figure 2. PXI Express Backplane Signal Routing Diagram

The phase noise and stability of the backplane system reference clocks are important characteristics of the PXI chassis because they indicate how reliably you can expect to synchronize modules within the system. Given the choice of components and backplane design, the PXI Express 100 MHz differential system clock in NI PXI Express chassis features phase noise performance that is orders of magnitude better than other vendors' chassis in the same class.

You can phase lock loop (PLL) the 10 MHz and 100 MHz system reference clocks to a higher stability clock source than the one on the chassis backplane. This helps higher sample rate PXI modules to better align their samples across multiple instruments. The PLL circuitry of the NI PXI chassis is designed to suppress more noise when locking to an external reference, thus permitting cleaner transmission of the higher stability clock source. With other vendors' chassis, you may need to individually phase lock the external reference clock to each module instead of at the system level, which can add complexity and cost depending on the application's phase noise requirements.

10 MHz REF Clock Connectors

When the 10 MHz REF IN connector on NI PXI Express chassis detects a signal, the backplane automatically phase locks the PXI_CLK10, PXIe_CLK100, and PXIe_SYNC100 signals to this external clock and distributes these signals to the peripheral slots for synchronization. Additionally, you can use the 10 MHz REF OUT connector to route the backplane's PXI_CLK10 to another chassis for synchronization, or you can insert a timing and synchronization module (for example, the **NI PXIe-6674T**) in the system timing slot to drive the PXI_CLK10 of the chassis with a higher stability clock. The10 MHz REF connectors on the NI PXIe-1095, NI PXIe-1092, and NI PXIe-1084 are included on the rear of the chassis as part of their timing and synchronization upgrade options.

Figure 3. 10 MHz REF IN and OUT SMA Connectors on the PXIe-1095 Chassis for Multichassis Synchronization

Cooling

NI chassis are designed and validated to meet or exceed the cooling requirements for the most power-demanding PXI modules. The PXI Express power specification requires a minimum of 30 W available to each peripheral slot—and each slot must dissipate that same amount of heat.

NI PXI Express chassis exceed PXI Express requirements by supplying at least 38.25 W of power and cooling to each peripheral slot. Some chassis even extend slot cooling capacity further by providing 58 W or 82 W of cooling to a single slot. This extra power and cooling enable advanced capabilities of high-performance modules, such as digitizers and high-speed digital I/O and RF modules, in applications that may require continuous acquisition or high-speed testing. Chassis vary in total system power, so performing a system-level power budget when configuring a new system is always recommended.

Many NI chassis limit electrical noise from moving parts like cooling fans by positioning fans at the rear of the chassis. Some models further reduce noise by using a dedicated 12 V power supply for the fans and controller slot, preventing noise from affecting the measurement module power rails.

Acoustics

The NI PXIe-1090, PXIe-1092, and PXIe-1095 are some of the quietest NI chassis in the typical 38 W cooling profiles, with sound pressure levels in the range of only 32 dBA to 38 dBA. Accounting for fan speed control, the type of fan used, and fan-mounting method makes cooling optimization possible while minimizing the acoustic noise emitted. Many NI PXI chassis feature pulse-width modulated (PWM) fans to reduce acoustic emissions further than traditional voltage-controlled fans do. PWM fan control enables NI chassis designers to adjust fan speed more precisely, optimizing both noise levels and cooling efficiency.

NI PXIe-1090 Two-Slot PXIe Chassis

The PXIe-1090 is the most compact and cost-effective NI PXIe chassis, purpose-built for benchtop applications where space and budget are critical. Like the PXIe-1083, it features Thunderbolt™ connectivity for fast, hassle-free setup—eliminating the need for a dedicated PCIe card.

Designed for users who require just one or two instruments, the PXIe-1090 delivers a streamlined solution without the complexity of separate controllers and chassis. Its key advantages include:

- 58 W cooling per slot for dependable performance, even with high-power modules
- 2 GB/s streaming bandwidth to handle demanding measurement and data acquisition tasks
- Low acoustic emissions for quiet operation in lab environments

With its compact footprint and powerful PXI capabilities, the PXIe-1090 is a smart, cost-effective choice for any benchtop test system.

Figure 4. The 2-Slot PXIe-1090 Chassis

All Hybrid Slot Options

For maximum instrument placement flexibility, you can insert both PXI Express and hybrid-compatible PXI modules in the NI PXIe-1081 or PXIe-1084 chassis because all 17 peripheral slots are hybrid slots. As shown in Table 1, all NI PXI Express chassis feature one or more hybrid slots, but some are more optimized for this use case than others.

Figure 5. The PXIe-1084 features 17 hybrid peripheral slots.

Power Supplies

The instrument-grade power supplies implemented in NI PXI chassis are optimized to meet the unique power requirements of PXI as opposed to ATX power supplies, which are designed for general use in PCs. They are custom-designed for NI chassis to meet and exceed the PXI specification's minimum power requirements. With these power supplies, NI PXI Express chassis can deliver at least 38.25 W to a peripheral module, while some chassis such as the PXIe-1095 and PXIe-1092 can deliver 82 W of power to all modules in a filled chassis. NI PXI chassis can provide the minimum power requirement over the entire specified operating temperature range (0 °C to 50/55 °C) with no power derating (refer to product manuals for operating temperature ranges for specific NI PXI chassis models).

Reliability and Uptime

Some NI PXI chassis are designed specifically for maximizing uptime and system availability, resulting in a low mean time to repair (MTTR). Instrumentation power supply failures are costly for most automated test systems. For example, PXIe-1095 power supplies can be quickly accessed, removed, and replaced from the chassis rear without de-racking or disconnecting I/O.

Figure 6. PXIe-1095 power supplies are located at the rear of the chassis.

Power Supply Replacement

Part Number	782106-01	782107-01	784057-01	781719-01	786300-01
Description	Replacement Power Supply for NI PXIe-1066DC and PXIe-1086DC	Replacement Power Supply for NI PXIe-1066DC and PXIe-1086DC—for EU	Power Supply Filler Panel for PXIe-1066DC and PXIe-1086DC	Replacement Power Supply for PXIe-1085	Upgrade/ Replacement Power Supply for PXIe-1092 or PXIe-1095
PXIe-1086DC	✓	✓	✓	—	—
PXIe-1086	✓	✓	✓	—	—
PXIe-1085	—	—	—	✓	—
PXIe-1092 Timing and Synchronization (786991-01)	—	—	—	—	✓
PXIe-1092	—	—	—	—	✓
PXIe-1095	—	—	—	—	✓
PXIe-1095 Timing and Synchronization (785971-01)	—	—	—	—	✓

Monitoring Features

Several chassis variants include terminals for remotely powering on or off the chassis or monitoring overall chassis health for any detected faults. Most NI chassis also feature remote sensing of the output voltage on the backplane power rails to compensate for voltage drops. This design feature is important for PXI Express chassis, particularly for applications with high-power modules; it provides better regulation at the backplane when there are large load swings.

For local monitoring, NI chassis feature several internal sensors that check individual voltage rails, fan speed, and temperature. The current value of these sensors can be displayed in NI Measurement & Automation Explorer (NI MAX) or programmatically accessed through the System Configuration API to ensure stable operating conditions. With these temperature readings, for instance, you can pinpoint the operating temperatures of your system and instruments for troubleshooting purposes. You also can use some temperature readings in the fan speed algorithm of the chassis.

The System Configuration API gathers information about devices on both local and remote systems. You can use the System Configuration API to programmatically reboot a system, save and load system images, install and uninstall software, and obtain information about a system like current temperature, fan speed, or calibration dates. You can find the System Configuration palette on the functions subpalette in NI LabVIEW within the Measurement I/O palette.

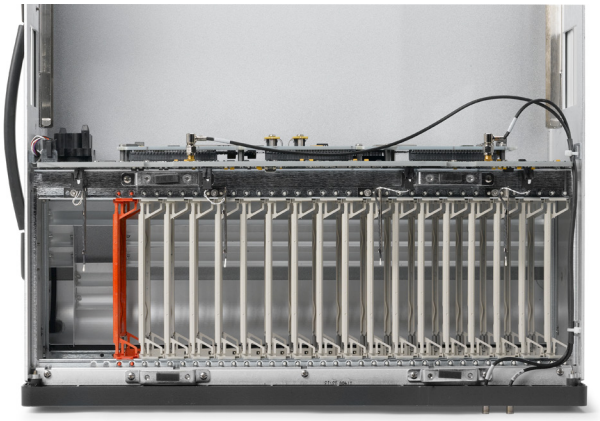


Figure 7. The top casing of this PXIe-1085 chassis is removed to show four outlet air temperature sensors (the front of the chassis is at the bottom of the image).

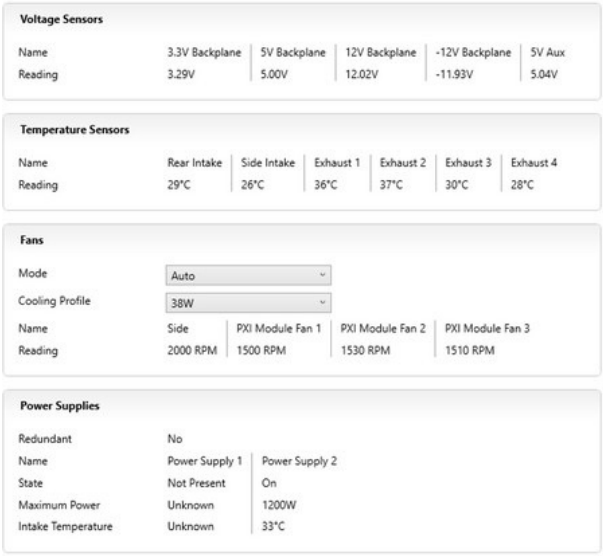


Figure 8. PXIe-1095 Chassis Sensors for Voltage Rails, Temperature, Fan Speed, and Power Supply Temperature in NI MAX

Peer-to-Peer Streaming

Processing-intensive applications such as prototyping 5G wireless communications or performing real-time spectrum analysis (RTSA) warrant the addition of inline, user-defined FPGA processing. NI PXI Express chassis and software enable peer-to-peer communication from a modular instrument to an FPGA module for inline signal processing that bypasses the PXI embedded controller. For more information, see the white paper **An Introduction to Peer-to-Peer Streaming**.

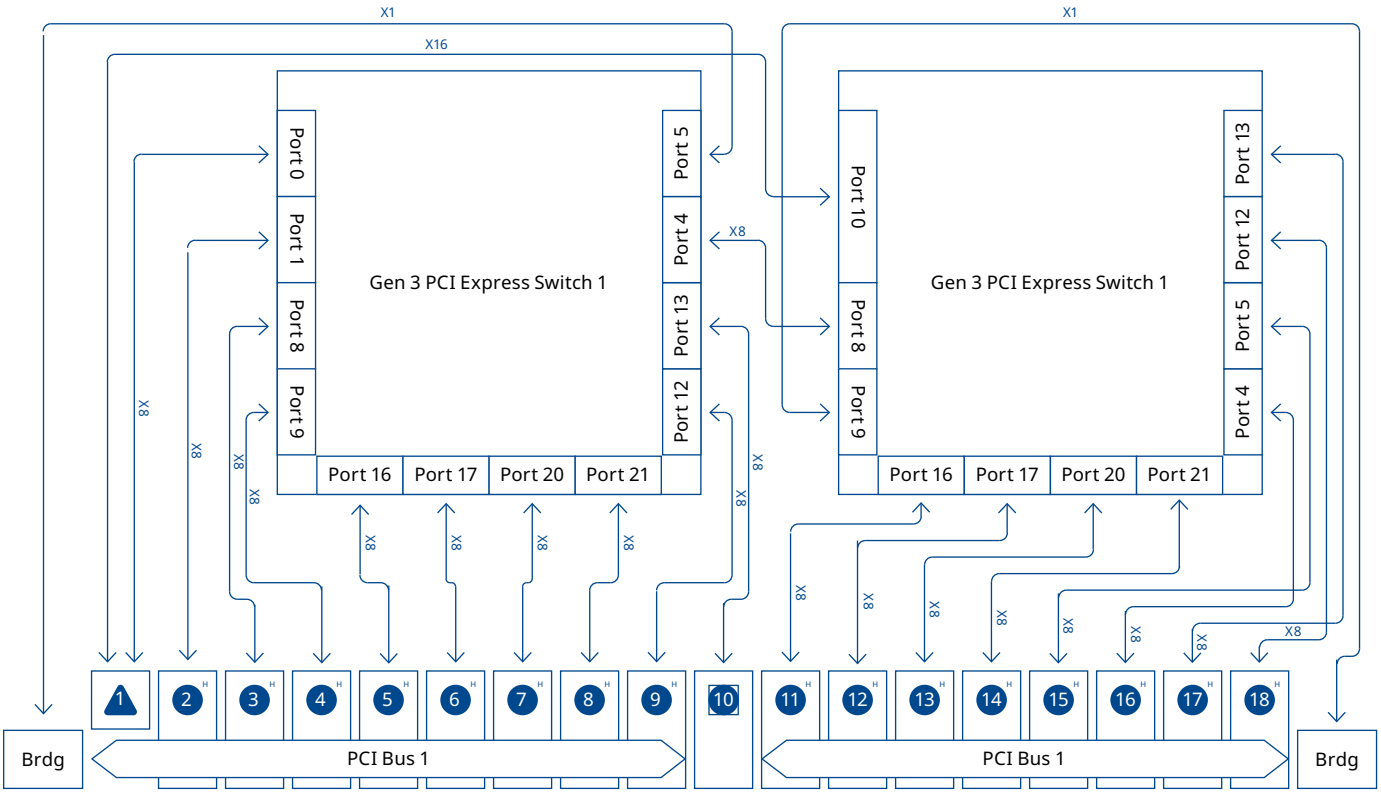


Figure 9. The PXIe-1085 24 GB/s chassis provides 8 GB/s peer-to-peer streaming bandwidth.

Software

PXI Platform Services API for System Health Monitoring

Automatically installed in each PXI system, PXI Platform Services is a software package that enables advanced PXI features such as chassis and module identification, synchronization, and triggering. It also allows you to monitor and manage system health programmatically using the System Configuration API. This API is accessible from LabVIEW as well as C, .NET, and other supported languages, enabling you to:

- Query chassis temperature, fan speed, and power status
- Retrieve module information and operational status
- Automate self-tests and calibration routines
- Log diagnostic data for predictive maintenance

Hardware Configuration Utility (HWCU)

Automatically installed in each PXI system, Hardware Configuration Utility is the next-generation NI tool for discovering, configuring, and managing test and measurement hardware:

- View local and remote real-time systems
- View hardware configuration information, including required software and drivers
- Perform built-in hardware operations such as resetting, calibrating, and self-testing
- View hardware documentation such as pinouts, user manuals, and specs
- View and manage system software
- Manage base system images on real-time systems
- View hardware soft front panels
- Save and apply system configurations

HWCU is designed to replace NI Measurement & Automation Explorer (NI MAX) with a modern, streamlined interface and improved workflows. Most hardware is supported in Hardware Configuration Utility; however, if you encounter unsupported devices or tasks, you can continue using NI MAX for full functionality.

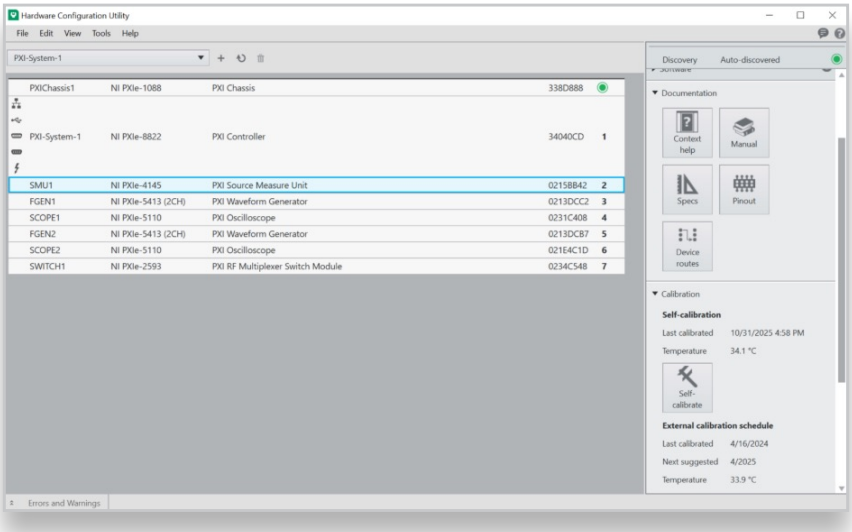


Figure 6. NI Hardware Configuration Utility displaying a PXI system setup. The right panel provides documentation links (manual, specs, pinout) and calibration details, including the last self-calibration date and temperature.

Measure in Seconds, Automate in Minutes

The NI PXI platform streamlines every stage of automated test, from interactive measurements to full system automation. Application software includes:

NI InstrumentStudio™ software—Simplify setup and control of multiple instruments in a single interface (included in every PXI system).

LabVIEW—Rapidly develop custom measurements with intuitive graphical programming.

TestStand—Orchestrate complex test sequences and reporting.

NI Nigel™ AI—Accelerate your setup and insight with the first AI advisor for test and measurement.

For maximum flexibility, PXI hardware, instrument drivers, and NI software support Python, C, C++, and .NET.

Learn more about support for NI and Python

Supporting Documentation

Document Type	Model
Getting Started Guide	PXIe-1071, PXIe-1073, PXIe-1081, PXIe-1083, PXIe-1084, PXIe-1085, PXIe-1086, PXIe-1086DC, PXIe-1088, PXIe-1090, PXIe-1092, PXIe-1095
Specifications	PXIe-1071, PXIe-1073, PXIe-1081, PXIe-1083, PXIe-1084, PXIe-1085, PXIe-1086, PXIe-1086DC, PXIe-1088, PXIe-1090, PXIe-1092, PXIe-1095

Configure a System

The NI online system advisors help you create a custom system based on your specific requirements. Use the advisors to choose compatible hardware, software, accessories, and services—and then save your selections as configurations for easy quoting and purchasing later. Visit **ni.com/advisor** to learn more.

NI PXI: Built for Automated Test and Measurement

NI PXI is a high-performance test and measurement platform that integrates hardware and software—including chassis, controllers, modular instruments, and I/O modules—with advanced synchronization to tackle complex measurement and automation challenges. Renowned for its flexibility and reliability, engineers use PXI to build complex, mixed-measurement systems for applications ranging from research to validation and production test.

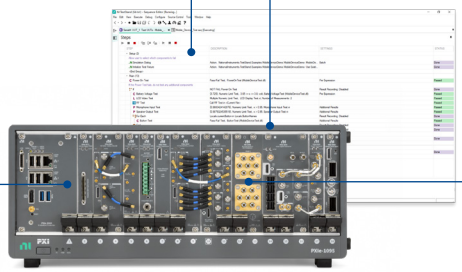
Developed in 1997 and launched in 1998, PXI is an open industry standard governed by the PXI Systems Alliance (PXISA), a group of more than 70 companies chartered to promote the PXI standard, ensure interoperability, and maintain the PXI specification.

Software

Test Management and Code
Development from measurement to automation. Manage, control and debug all in one connected workflow.

Powerful Computer

PXI Embedded or Remote Controller
Latest Intel® processors, Windows or Real-Time operating systems, up to 24 GB/s bandwidth, and up to 912 GB of storage.



Timing and Synchronization

PXI Chassis
2–18 slots options, up to 24 GB/s, sub-nanosecond latency, P2P streaming, integrated triggering.

Modular Instrumentation

PXI Modules
High density and variety of modules delivering power, precision, and flexibility across analog, digital, and RF signals.

Integrating the Latest Commercial Technology

By leveraging advanced commercial technologies, we deliver high-performance, high-quality products at a competitive price. Our systems incorporate high-bandwidth interconnects for faster data throughput, powerful multicore processors for efficient parallel testing, FPGAs that accelerate signal processing at the edge, and precision data converters that expand measurement range and enhance instrumentation performance.

NI PXI Instrumentation

PXI Oscilloscopes

- Sample at speeds of up to 5 GS/s
- 1.5 GHz of analog bandwidth
- Numerous triggering modes
- Up to 24-bit resolution

PXI LCR Meters and SMUs

- AC stimulus frequency up to 2 MHz
- AC stimulus amplitude up to 7.07 Vrms
- DC bias up to ± 40 V
- Basic impedance accuracy of 0.05%

PXI 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 to 1.8 MS/s

PXI Digital Pattern Instruments

- 32-channel module (up to 512 per chassis)
- 100 MHz vector rate, 39 ps displacement
- Digital voltage of -2 V to 6 V
- Up to 200 Mb/s data rate

PXI 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

PXI Digital Waveform Instruments

- Standard TTL/CMOS interface voltages and programmable voltage levels
- 32 bidirectional digital channels
- Advanced waveform sequencing and streaming features

PXI Counter/Timers

- Up to eight 32-bit counter/timers
- TTL/CMOS-compatible digital I/O
- Up to 80 MHz measure frequency
- Onboard high-precision oscillators

PXI Electronic Loads

- Ability to sink up to 300 W of DC power
- Voltage and current measurements with sample rates up to 1.8 MS/s and update rates up to 100 kS/s
- Hardware timing and triggering
- Four-wire remote sense

PXI Power Supplies

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

PXI High-Speed Serial

- Up to 48 Xilinx Multigigabit transceivers (MGTs) with line rates up to 28.2 Gb/s
- Various high-speed serial protocols on the user-programmable Xilinx Kintex™ UltraScale+™ or 7 series FPGAs
- High-speed P2P backplane data streaming up to 7 GB/s to host, disk, or other PXI Express modules
- Up to 20 GB onboard DDR3 DRAM

PXI Switches

- Electromechanical, reed, solid-state, FET
- Up to 150 V or 2 A
- Up to 544 crosspoints in a single PXI slot
- 1- and 2-wire options

PXI FlexRIO

- Analog I/O up to 6.4 GS/s, digital I/O up to 1.25 Gb/s, RF I/O up to 4.4 GHz
- High-performance Xilinx FPGAs with up to 20 GB of onboard DRAM
- Program with LabVIEW FPGA or Xilinx Vivado™
- Develop application-specific I/O with FlexRIO Module Development Kit

PXI Source Measure Units (SMUs)

- Up to 24 channels (408 per chassis)
- Up to 200 V and 3 A (10 A pulse)
- Current sensitivity down to 10 fA
- Max power per channel of 40 W (500 W pulse)

PXI Signal Conditioning Modules

- High channel density for conditioned and sensor measurements
- Flexible, synchronized, and accurate measurements
- Isolated measurement options
- Swappable front mount terminal block

PXI Timing and Synchronization

- Generate high-stability PXI system reference clocks and high-resolution sample clocks
- Achieve synchronization over long distance through GPS, IEEE 1588, IRIG-B, or PPS
- Develop advanced timing and sync applications with NI-Sync and NI-TClk software
- Import and export system reference clocks for synchronization between multiple chassis or external devices

PXI Sound and Vibration

- Built-in high-pass filtering
- Reliable dynamic signal characterization
- Per-channel, software-selectable AC input coupling
- Per-channel, software-selectable input gain settings

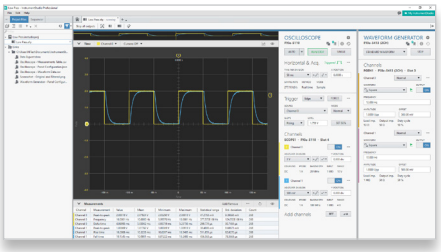
PXI Reconfigurable I/O (FPGA)

- Variety of onboard FPGA options
- 12-bit to 18-bit analog input resolution
- Up to 16 analog channels and 96 bidirectional channels
- Up to 1 MS/s analog sample rate

NI Test Software Portfolio Overview

NI Software: The Right Tools for the Job

NI has a variety of software for engineers working on research, validation, and production test applications. Learn about our software that helps engineers perform quick ad-hoc tests, build an automated test system, automate data analysis and reporting, develop test sequences, and more.



NI InstrumentStudio

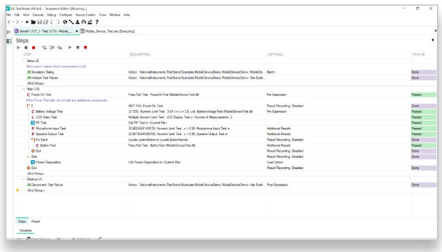
Interactive, configuration-based software for engineers to control and configure instruments.

- Take multi-instrument measurements within one unified environment
- Capture data and instrument configuration for test reports
- Export instrument configurations to LabVIEW and TestStand to shorten development time
- Monitor and debug instruments while software is running

NI LabVIEW

Graphical programming environment that engineers use to develop automated research, validation, and production test systems.

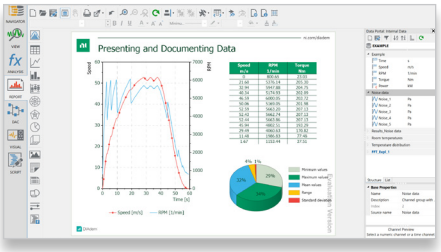
- Acquire data from NI and third-party hardware and communicate using industry protocols
- Use configurable, interactive display elements
- Take advantage of available analysis functions



NI TestStand

Test executive software that accelerates system development for engineers in validation and production.

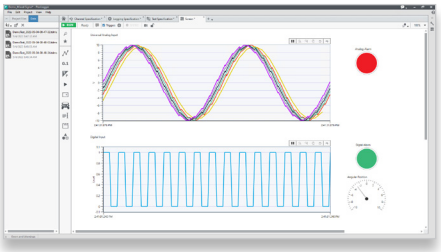
- Call and execute tests in LabVIEW, Python, C/C++, or .NET
- Conduct complex tasks, such as parallel testing
- Create customer operator interfaces and robust tools for deployment and debugging



NI DIAdem

Data analytics software for measurement data search, inspection, analysis, and automated reporting.

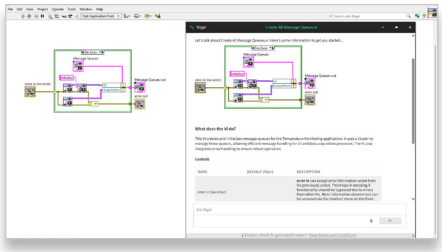
- Display data in multiple 2D-axis systems
- Perform calculations with a simple point-and-click interface
- Automate your measurement data analysis workflow, from import to analysis



NI FlexLogger™

No-code data acquisition software engineers use to build validation and verification test applications.

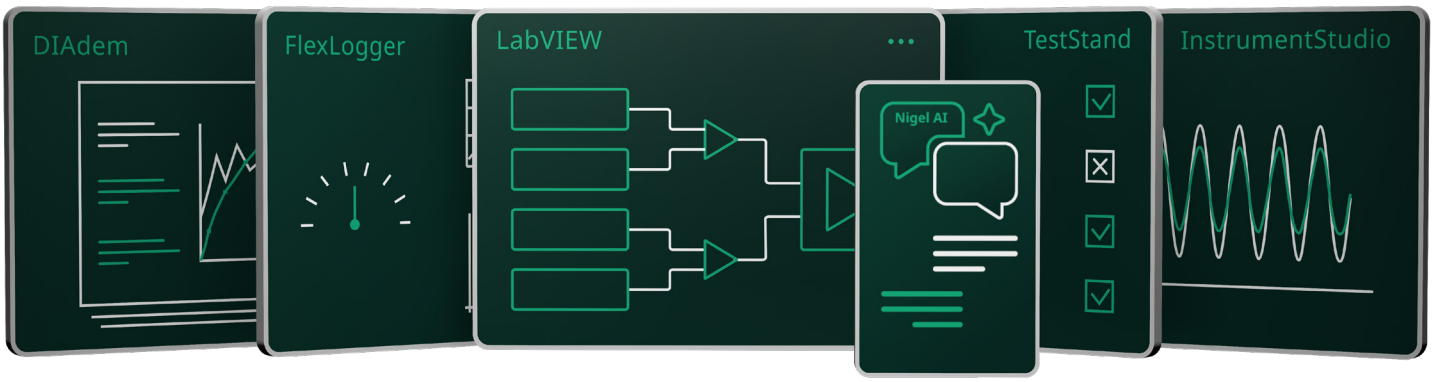
- Interactive visualization tools for monitoring tests with drag-and-drop charts, graphs, and controls
- Ability to set alarms that monitor single channels or groups for unexpected behavior



NI Nigel™ AI

AI tool that provides contextual guidance and insights, helping engineers to eliminate time-consuming tasks and boost productivity.

- Purpose-built for test and measurement workflows
- Optimized for test applications using NI domain expertise
- Integrated into LabVIEW and TestStand for real-time suggestions without switching tools



Get Access to All the Software You Need in the LabVIEW+ Suite

It's LabVIEW, plus whole lot more. The LabVIEW+ Suite brings together the best of NI test software that saves engineers time by optimizing every part of their workflow. Each software includes features and capabilities designed to accelerate test:

- LabVIEW is the industry-leading environment for automated test system development.
- TestStand is used in validation labs and on manufacturing floors across the world to automate and sequence tests.
- DIAdem saves engineers hundreds of hours of manual data analysis and report creation with automation.
- FlexLogger and InstrumentStudio software make measurement and instrument configuration a quicker and interactive process

NI Partner Network

The NI Partner Program offers domain, application, and overall test development expertise to help your team get ahead and stay ahead.

Innovate faster with proven scalable solutions. Reduce development time and cost through Integration and Consulting assistance.

Types of Partners

Solution Partners

Experts in delivering products and solutions to solve your specific automated test or automated measurement application challenges.

System Integrators

Specialists in integrating and deploying test and measurement systems, based on your specific requirements and their mature industry capabilities.

Consultants

Consultants offer expert project services in areas such as software development, engineering, science, analytics, or regulatory compliance, or other specialized skills to support complex systems.

Connect with our global community of trusted NI Partners ready to give your business a competitive edge.

Find a Partner or Solution at **ni.com/findapartner**.

NI Hardware Services

All NI hardware includes a one-year warranty for basic repair coverage and calibration in adherence to NI specifications prior to shipment. Additional entitlements are available to improve uptime and lower maintenance costs with service programs for hardware. Learn more at **ni.com/services/hardware**.

Benefits	Hardware Warranty	Standard Service Program	Premium Service Program	Description
Duration at Point of Sale	1 year; included	3 years; optional	3 years; optional	We enhance warranty coverage with additional service benefits provided with a hardware service program.
Technical Support Access	✓	✓	✓	We provide access to support resources for your hardware. Learn about support services
Repair Service Coverage*	Factory Defects and Workmanship	Comprehensive and Unlimited	Comprehensive and Unlimited	We restore your device's functionality. Includes firmware updates. Learn more
Adjustments to Factory Specifications with every repair[3]*	✓	✓	✓	We assure that your device will be adjusted to the manufacturer's specifications, ensuring all measurements are within tolerance as part of the repair process.
Repair Service Turnaround Time*	No Commitment	<10 working days[1] + standard shipping	<10 working days[1] + standard shipping	If we miss our committed repair turnaround time targets, you are entitled to a 25% discount on your next service renewal on that asset.[2]
System Configuration, Assembly, and Test	—	✓	✓	NI technicians assemble, install software in, and test your system per your custom configuration prior to shipment. Learn more
System Return Material Authorization (RMA)[4]	—	—	✓	We accept the delivery of fully assembled systems when performing repair services. Learn more
Advanced Replacement[5]	—	—	✓	We stock replacement hardware that can be shipped immediately if a repair is needed, fulfilled in <1 working day + express shipping. Learn more
Calibration Plan* (optional, with purchase)	—	✓	✓	We perform the requested level of calibration at the specified calibration interval for the duration of the service program. Learn more
Calibration Turnaround Time* (optional, with purchase)	—	Standard: <10 working days + standard shipping	Expedited: <3 working days + express shipping[6]	

Note: Updates marked with * will take effect starting in December 2025.

[1]Does not include shipping times. Some products are not eligible. Standard extended repair turnaround time for RF products is <15 working days + standard shipping.

[2]Discount is applied against the next sequential Service Program renewal period on the same asset. It is applicable only to renewals of same or higher-level service and has no cash value.

[3]Adjustment of Instrument to within tolerable limits as needed. Does not include certificate with as-found or as-left data.

[4]This option is available for PXI, CompactRIO, and CompactDAQ systems.

[5]This option is not available for all NI products in all countries. Contact your local NI sales engineer for more information.

[6]Expedited calibration is only available for the traceable calibration level.

Premium Plus Service Program

NI can customize the offerings listed on the previous page or offer additional entitlements such as on-site calibration, custom sparing, and lifecycle services through a PremiumPlus Service Program. Contact your NI sales representative to learn more.

Technical Support

NI hardware service programs and warranty include access to technical support provided by NI support agents during local business hours. Service requests can be managed online. Additionally, take advantage of award-winning NI online resources and communities.

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