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PXI Express Chassis with Integrated MXI-Express Remote Controller

NI PXIe-1073 *NEW!*

- Low-cost chassis for remote control applications
- Controlled from either a PCI Express desktop host or an ExpressCard laptop host
- 3 hybrid slots and 2 PXI Express slots
- MXI-Express remote controller achieves up to 215 MB/s sustained throughput
- Up to 250 MB/s per-slot dedicated bandwidth (x1 PCI Express), 250 MB/s total system bandwidth
- Acoustic noise as low as 43.3 dBA
- Accepts 3U PXI Express and CompactPCI Express modules in every slot and PXI and CompactPCI modules in designated slots

Reliability

- 0 to 50 °C operating temperature range
- 150 W from 0 to 50 °C without derating

Optional Accessories

- Rack-mount kit
- Handle and feet kit
- Slot blockers for directing air flow inside the chassis
- System assurance program



Overview

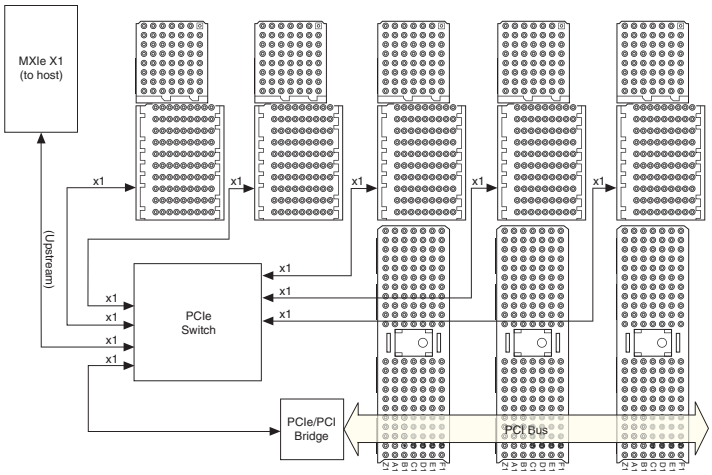
NI PXIe-1073 chassis kits consist of a low-cost chassis featuring an integrated controller for remote control applications, either a host PCI Express board for desktops or a host ExpressCard for laptops, and a cable. These kits can help you create the lowest-cost PXI Express systems on the market today. With an integrated MXI-Express controller in the chassis, the NI PXIe-1073 provides a transparent, remote link with up to 208 MB/s sustained throughput to the host computer. It features five peripheral slots for I/O modules, compact, rugged packaging, and quiet operation, which make it ideal for portable, desktop, and industrial control applications.

Low-Cost PXI/PXI Express System

With an integrated MXI-Express remote controller, the NI PXIe-1073 offers the most attractive price per slot for a PXI Express system. The chassis has five module slots, three of which can accept either PXI Express or standard PXI hybrid-compatible modules. This makes the chassis a logical choice for engineers requiring only PXI slots but needing the flexibility to add PXI Express modules in the future.

Lightweight and Quiet Portable System

The compact, rugged, and portable NI PXIe-1073 weighs less than 12 lb, making it ideal for portable applications. It features an AUTO/HIGH fan-speed selector that provides a HIGH fan-speed setting to maximize cooling and AUTO fan setting to minimize acoustic emissions. When set to AUTO, the NI PXIe-1073 chassis monitors air intake temperature and adjusts the fan speed accordingly. When set to AUTO in an environment with an ambient temperature of 25 °C, the sound pressure level measured at the operator interface is only 43.3 dBA.



NI PXIe-1073 Backplane Architecture

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PXI Timing and Synchronization

For PXI modules, the NI PXIe-1073 backplane is fully compliant with PXI timing and synchronization standards. The chassis includes a 10 MHz reference clock with an accuracy of ±25 parts per million (ppm), less than 5 ps jitter, and a maximum slot-to-slot skew of 250 ps. For triggering and handshaking needs, the NI PXIe-1073 offers the PXI trigger bus.

For PXI Express modules, in addition to PXI timing and synchronization features, the NI PXIe-1073 backplane delivers a differential 100 MHz reference clock with an accuracy of ±25 ppm, less than 3 ps jitter, and a maximum slot-to-slot skew of 100 ps.

The NI PXIe-1073 does not offer a system timing slot, which provides the ability to import/export the 10 MHz clock and PXI triggers. It also does not provide a star trigger. For more advanced timing and synchronization, consider one of the high-performance NI PXI Express chassis.

Software System Configuration

The NI PXIe-1073 chassis system software is configured with NI Measurement & Automation Explorer (MAX). NI MAX allows for easy configuration without the need to use manually installed configuration files. MAX automatically creates the pxisys.ini file that defines the layout and parameters of your PXI system including chassis, controller, and plug-in modules.

PXI System Assurance Program

With NI system assurance programs, you receive complete system-level assembly and functional testing of the PXI chassis, controller, and all peripheral devices, as well as installation of all device drivers and software programs such as NI LabVIEW. For online configuration of a complete PXI system, including information about the NI system assurance programs, visit the PXI Advisor at **ni.com/pxiadvisor**.

Ordering Information

For the best experience in ordering your PXI system, use the intuitive NI PXI Advisor online to select all of your system components. Visit **ni.com/pxiadvisor**.

Step 1. Select your chassis/host.

Chassis with PCI Express host

NI PXIe-1073 with

- 3 m cable 781161-01
- No cable 781161-02

Chassis with ExpressCard host

NI PXIe-1073 with

- 3 m cable 781162-01
- No cable 781162-02
- Chassis only (no host card or cable) 781163-01

Step 2. Select additional cables if necessary.

MXI-Express cable

- 1 m 779500-01
- 3 m 779500-03
- 7 m 779500-07

Step 3. Select one or more power cords.

- U.S. 120 VAC 736000-01
- Japan 100 VAC 736000-01
- United Kingdom 240 VAC 763064-01
- Swiss 220 VAC 763065-01
- Australian 240 VAC 763066-01
- Universal Euro 240 VAC 763067-01
- North American 240 VAC 763068-01

Step 4. Select additional accessories.

To see a complete list of accessories available for your PXI system, visit **ni.com/pxiadvisor**.

- NI PXI-103x/NI PXIe-107x rack mount kit 778948-01
- NI PXI-103x/NI PXIe-107x side-handle and rubber-feet kit 778949-01
- EMC filler panels (6 single-slot) 778700-01
- Filler panel kit (7 single-slot, 1 double-slot, and 2 quadruple-slot)[1] 778646-01
- NI PXI slot blocker, set of 5[2] 199198-01

[1] Every NI PXIe-1073 comes with a filler panel kit.

[2] Slot blockers are optional for improved thermal performance of your NI PXIe-1073. When you select the NI Standard System Assurance Program, unpopulated slots are populated with slot blockers automatically.

Step 5. Select system setup and installation services.

If you are ordering this chassis as part of a system, select an NI system assurance program to have your hardware/software installed and receive your new PXI system ready to use right out of the box.

Use the PXI Advisor at **ni.com/pxiadvisor** to properly select your PXI system.

BUY NOW

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to **ni.com/pxi**.

Specifications

This appendix contains specifications for the NI PXIe-1073 chassis. For complete specifications, refer to the *NI PXIe-1073 User Manual* at **ni.com/manuals**. Specifications are subject to change without notice.

Electrical

AC Input

Input voltage rating..... 100 to 240 VAC (UL Listed)

Operating voltage range[1] ..... 90 to 264 VAC (UL Listed)

Input frequency ..... 50/60 Hz

Input current rating ..... 4-2 A maximum

Efficiency ..... 70% typical

[1]The operating range is guaranteed by design.

Power disconnect..... The AC power cable provides main power disconnect. The front panel power switch controls the internal chassis power supply that provides DC power to the CompactPCI/PXI backplane.

DC Output

DC current capacity (IMP)

Voltage	Maximum Current (A)
+3.3 V	15
+5 V	7.5
+12 V	15
-12 V	0.75
5 V_{AUX}	1.0

Note: Maximum total power is 150 W. This represents 30 W per slot for each of the five slots of the chassis. The maximum power dissipated in a peripheral slot should not exceed 38.25 W.

Chassis Cooling

Module cooling system

NI PXIe-1073 ..... Forced air circulation (positive pressurization) through a High Flow fan with HIGH/AUTO speed selector

Slot airflow direction..... Bottom of module to top of module

Module cooling intake ..... Bottom of chassis

Module cooling exhaust..... Along rear, right side, and top of chassis

Power supply cooling system..... Forced air circulation through integrated fan

Power supply cooling intake..... Front side of chassis

Power supply cooling exhaust ..... Rear side of chassis

Environmental

Maximum altitude..... 2,000 m (800 mbar) (at 25 °C ambient)

Measurement category..... II

Pollution degree 2

For indoor use only.

Operating Environment

Ambient temperature range..... 0 to 50 °C (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 low temperature limit and MIL-PRF-28800F Class 2 high temperature limit)

Relative humidity range ..... 20 to 90%, noncondensing (tested in accordance with IEC-60068-2-56)

Storage Environment

Ambient temperature range..... -40 to 71 °C (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 limits)

Relative humidity range ..... 10 to 95%, noncondensing (tested in accordance with IEC-60068-2-56)

Shock and Vibration

Operational shock ..... 30 g peak, half-sine, 11 ms pulse (tested in accordance with IEC-60068-2-27; meets MIL-PRF-28800F Class 2 limits)

Random vibration operating..... 5 to 500 Hz, 0.3 g_{rms}

Acoustic Emissions

Sound Pressure Level (at Operator Position)

(tested in accordance with ISO 7779; meets MIL-PRF-28800F requirements)

Auto fan (at 25 °C ambient)..... 43.3 dBA

High fan..... 58.3 dBA

Sound Power

Auto fan (at 25 °C ambient)..... 51.3 dBA

High fan..... 64.6 dBA

System Synchronization Clocks (PXI_CLK10, PXIe_CLK100, PXIe_SYNC100)

10 MHz System Reference Clock: PXI_CLK10

Maximum slot-to-slot skew	250 ps
Accuracy	±25 ppm max (guaranteed over the operating temperature range)
Maximum jitter	5 ps RMS phase-jitter (10 Hz to 1 MHz range)
Duty-factor	45 to 55%
Unloaded signal swing	3.3 V ±0.3 V

Note: For other specifications, refer to the PXI-1 Hardware Specification.

100 MHz System Reference Clock: PXIe_CLK100 and PXIe-SYNC100

Maximum slot-to-slot skew	100 ps
Accuracy	±25 ppm max (guaranteed over the operating temperature range)
Maximum jitter	3 ps RMS phase-jitter (10 Hz to 12 kHz range) 2 ps RMS phase-jitter (12 kHz to 20 MHz range)
Duty-factor for PXIe_CLK100	45 to 55%
Absolute differential voltage (when terminated with a 50 W load to 1.30 V or Thévenin equivalent)	400 to 1000 mV

Note: For other specifications, refer to the *PXI-5 PXI Express Hardware Specification.*

Mechanical

Overall dimensions

Standard chassis

Height	6.97 in. (177.1 mm)
Width	10.12 in. (257.1 mm)
Depth	8.38 in. (212.8 mm)
Weight	5.0 kg (11.0 lb)
Chassis materials	Sheet Aluminum (5052-H32,3003-H14, and 6061-T6), Extruded Aluminum (6060-T6), and Cold Rolled Steel, Nylon
Finish	Clear Chromate Conversion Coat on Aluminum Electroplated Nickel on Cold Rolled Steel Polyester Urethane Powder Paint

Backplane

Size	3U; 5 peripheral slots; compliant with IEEE 1101; 10 mechanical packaging; compliant with PXI Express Specification; accepts both PXI Express and CompactPCI (PICMG 2.0 R 3.0) 3U modules
Backplane bare-board material	UL 94 V-0 recognized
Backplane connectors	Conform to IEC 917 and IEC 1076-4-101, and are UL 94 V-0 rated

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- EN 61010-1, IEC 61010-1
- UL 61010-1, CSA 61010-1

Note: For UL and other safety certifications, refer to the product label or visit **ni.com/certification**, search by model number or product line, and click the appropriate link in the Certification column.

Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 61326 (IEC 61326): Class A emissions, basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note: For EMC compliance, operate this device according to printed documentation.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Note: Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit **ni.com/certification**, search by model number or product line, and click the appropriate link in the Certification column.

Waste Electrical and Electronic Equipment (WEEE)

EU Customers: At the end of their life cycle, all products must be sent to a WEEE recycling center. For more information about WEEE recycling centers and National Instruments WEEE initiatives, visit **ni.com/environment/weee.htm**.

NI Services and Support



NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing.
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Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products.
Visit **ni.com/training**.

Professional Services

Our NI Professional Services team is composed of NI applications and systems engineers and a worldwide National Instruments Alliance Partner program of more than 600 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit **ni.com/alliance**.

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OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit **ni.com/oem**.

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We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit **ni.com/ssp**.

Hardware Services

System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at **ni.com/advisor** to find a system assurance program to meet your needs.

Calibration Services

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit **ni.com/calibration**.

Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit **ni.com/services**.

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