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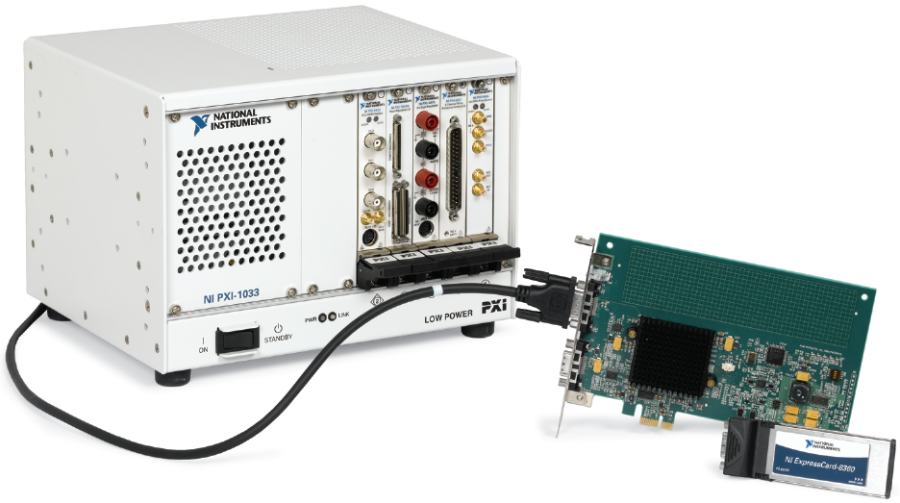
# PXI Chassis with Integrated MXI-Express Remote Controller

## NI PXI-1033 Series

- Low-cost chassis for remote control applications
- Controlled from either a PCI Express desktop host or an ExpressCard laptop host
- MXI-Express remote controller achieves up to 110 MB/s sustained throughput
- Rugged, compact package accepts up to 5 peripheral modules
- Acoustic noise as low as 38 dBA
- Accepts both 3U PXI and CompactPCI modules

### Options

- Compatible with all PXI-103x family accessories
  - Rack-mount kit
  - Handle and feet kit




## Overview

The National Instruments PXI-1033 Series chassis kits consist of a low-cost chassis designed with an integrated controller for remote control applications, either a host PCI Express board for desktops or a host ExpressCard for laptops, and a cable. The NI PXI-1033 Series reduces the already low entry cost of a PXI system by 50 percent when compared to a PXI-1031 4-slot chassis and MXI-Express controller. With an integrated MXI-Express controller in the chassis, the PXI-1033 provides a transparent, remote link with up to 110 MB/s sustained throughput. It offers five peripheral slots for I/O modules and features compact, rugged packaging as well as quiet operation, which makes it ideal for both portable and desktop ATE systems. The low cost and high performance of the PXI-1033 Series meet application needs in a variety of industries including automotive, ATE, and electronics.

## Low-Cost PXI Remote Control System

A PXI-1033 chassis kit lowers the PXI setup cost by 50 percent when compared to 4-slot PXI-1031 chassis with a MXI-4 Express kit. With this low-cost PXI entry point, engineers can control up to five PXI/CompactPCI modules across a remote link that offers 110 MB/s of sustained bandwidth – more than a 40 percent increase compared to MXI-4 PCI remote control of PXI.

## Lightweight, Portable System

The PXI-1033 chassis includes an integrated remote controller and five peripheral slots. The compact, rugged, and portable chassis weighs less than 12 lb and is small for portability. It features an operating temperature range of 0 to 50 °C.

## Quiet Acoustic Emissions for Improved Development Environment

The PXI-1033 chassis offers an AUTO/HIGH fan-speed selector that provides a HIGH fan setting to maximize cooling and AUTO fan setting to minimize acoustic emissions. When set in AUTO, the PXI-1033 chassis monitors air intake temperature and adjusts fan speed accordingly. Table 1 shows PXI-1033 acoustic emissions.

| Sound Pressure Level[1] (dBA) (measured at operator interface) | |
|---|---|
| Auto Fan (25 °C ambient) | 37.4 |
| High Fan | 51.5 |

[1]Tested in accordance with ISO 7779

*Table 1. PXI-1033 Acoustic Emissions*

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## Ordering Information

For online configuration of a complete PXI system, including chassis, modules, and all accessories, visit **ni.com/pxiadvisor**.

**Step 1. Select the chassis/host.**

Chassis for PCI Express host

NI PXI-1033 with

- 3 m cable ..... 779756-01
- No cable ..... 779757-01

Chassis for ExpressCard host

NI PXI-1033 with

- 3 m cable ..... 779758-01
- No cable ..... 779759-01
- Chassis only (no host card or cable) ..... 779760-01

**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.**

AC Power Cords

- U.S. 120 VAC ..... 763000-01
- Japanese 100 VAC ..... 763000-01
- 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.**

PXI-103x rack-mount kit ..... 778948-01

PXI filler-panel kit for chassis[1] ..... 778933-01

PXI-103x side-handle and rubber-feet kit ..... 778949-01

PXI chassis slot-blocker kit

- (2 single-slot blockers) ..... 778678-01

[1]Every PXI-1033 includes four single filler panels.

**Step 5. Select system setup and installation services.**

Receive this system with software installed and an additional one-year warranty on all components. Order through Factory Installation Services.

PXI 4 and 6-Slot FIS and Extended Warranty ..... 960597-04

### *BUY NOW!*

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



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# Specifications

Complies with PXI Hardware Specification, Revision 2.2. Accepts modules compliant with CompactPCI and PICMG.

## Electrical

### AC Input

| | |
|---|---|
| Input voltage range | 100 to 240 VAC |
| Operating voltage range[1] | 90 to 264 VAC |
| Input frequency | 50/60 Hz |
| Operating frequency range[1] | 47 to 63 Hz |
| Input current rating | 4 to 2 A |
| Efficiency | >70% at full load, normal input voltage |
| 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 PCI/CompactPCI backplane. |

*[1]The operating range is guaranteed by design.*

### DC Output

| Voltage (V) | Current (A) 0 to 50 °C |
|---|---|
| +3.3 | 10 |
| +5 | 15 |
| +12 | 2 .5 |
| -12 | 0.8 |

### DC current capacity ($I_{MP}$)

| | |
|---|---|
| Overcurrent protection | All outputs protected from short circuit and overload |

### Low-Power Compliance

The PXI-1033 is designed for portable applications and surpasses the power requirements outlined in the PXI specification for low-power chassis. As a result, depending on some of the modules used, power budgeting may be required.

| | Active Range (V) | |
|---|---|---|
| Nominal Voltage (V) | Minimum | Maximum |
| +3.3 | 3.76 | 4.3 |
| +5 | 5.74 | 7.0 |
| +12 | 13.4 | 15.6 |

### Overvoltage Protection

## Chassis Cooling

| | |
|---|---|
| Per-slot cooling capacity | 25 W |
| Slot airflow direction | P1 to P2, bottom of module to top of module |
| Module cooling system | Forced air circulation (positive pressurization) through a High Flow fan with HIGH/AUTO speed selector |
| Intake | Bottom of chassis |
| Exhaust | Along rear, right side, and top of chassis |
| Power supply cooling | |
| System | Forced air circulation through integrated fan |
| Intake | Front side of chassis |
| Exhaust | Rear side of chassis |

## Environmental

| | |
|---|---|
| Maximum altitude | 2,000 m (800 mb) (at 25 °C ambient) |
| Measurement Category | II |
| Pollution Degree | 2 |

For indoor use only.

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### Operating Environment

Ambient temperature ..... 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 high temperature limit)

Relative humidity ..... 20 to 80%, noncondensing (tested in accordance with IEC-60068-2-56)

### Storage Environment

Ambient temperature ..... -40 to 85 °C (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 limits)

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

## Backplane

Size ..... 3U-sized; integrated controller and 5 peripheral slots. Compliant with IEEE 1101.10 mechanical packaging. Compliant with PXI Hardware Specification, Revision 2.2. Accepts both PXI and CompactPCI 3U modules.

V(I/O)[1] ..... +5 V

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

*[1] V(I/O) is connected to the +5 V DC power plane, so the same specifications apply to V(I/O) and +5 V.*

## 10 MHz System Reference Clock (10 MHz REF)

Maximum clock skew between slots ..... 250 ps

Built-in 10 MHz clock accuracy ..... ±25 ppm (guaranteed over the operating temperature range)

External clock source

- Connectors ..... Slot 2 J2 (pin D17)
- Input frequency ..... 10 MHz ±100 ppm
- Input amplitude ..... 5 or 3.3 V TTL signal

## Mechanical

Overall dimensions (standard chassis)

Height ..... 177 mm (6.97 in.)

**Note:** 12.7 mm (0.50 in.) is added to height when feet are installed.

Width ..... 257.1 mm (10.12 in.)

Depth ..... 212.8 mm (8.38 in.)

Weight ..... 5 kg (11.0 lb)

Chassis materials ..... Sheet aluminum, extruded aluminum, cold-rolled steel, nylon

Finish ..... Clear chromate conversion coat on aluminum; electrodeposited nickel plate on steel, polyester urethane powder paint

## Shock and Vibration

Operational shock ..... 20 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 $g_{rms}$

Nonoperating ..... 5 to 500 Hz, 2.4 $g_{rms}$

(tested in accordance with IEC-60068-2-64; nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3)

## Acoustic Emissions

### Sound Pressure Level (at operator's position)

PXI-1033

- Auto fan (at 25 °C ambient) ..... 37.4 dBA
- High fan ..... 51.5 dBA

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

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### Sound Power

PXI-1033

| | |
|---|---|
| Auto fan (at 25 °C ambient) | 43.8 dBA |
| High fan | 60.9 dBA |
| | (tested in accordance with ISO 7779) |

## Safety and Compliance

### 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, CAN/CSA-C22.2 No. 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 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

**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:

- 73/23/EEC; Low-Voltage Directive (safety)
- 89/336/EEC; 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**.



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## Hardware Services

### NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with **ni.com/pxiadvisor**.

### 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

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