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# General-Purpose 14-Slot Chassis for PXI

## NI PXI-1044

- Accepts both PXI and CompactPCI 3U modules
- Up to 500 W removable, high-performance power supply with universal AC input
- Extended 0 to 55 °C operating range
- Acoustic Emissions 49 dBA
- Software programmable trigger routing between bus segments
- Software programmable trigger routing between bus segments
- Low jitter (<5 ps) 10 MHz reference clock
- External 10 MHz reference clock with BNC I/O connectors
- Temperature-controlled fan-speed
- Remote power-inhibit control and voltage monitoring

## Options

- Front and rear rack-mount kits
- Replacement power supply and fan shuttle
- Slot blockers for improved cooling performance
- Factory installation services



## Overview

The National Instruments PXI-1044 is a 14-slot PXI chassis that accepts both CompactPCI and PXI modules. With 500 W of total power, the NI PXI-1044 is a high-performance chassis for test and measurement applications. It has the same dimensions and rack-mount kit as the PXI-1045 (see Figure 1). For applications that require more than eight slots but less than 18, the PXI-1044 is an ideal solution. National Instruments also offers the PXI-1045 18-slot chassis.

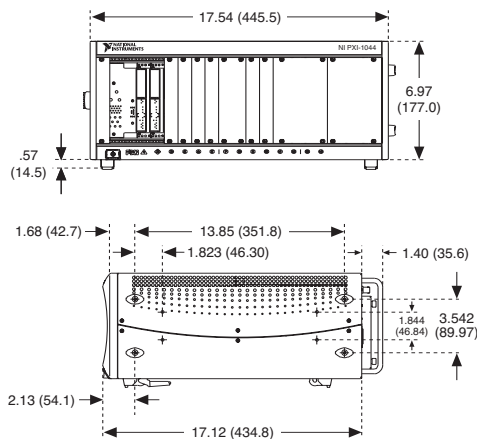


Figure A-1. PXI-1044 Dimensions (Front and Side) in Inches (mm)

## Power over the Entire Temperature Range

When selecting a PXI chassis, an important specification is available power for modules. The power supply is rated for 500 W total power; however all power is not available for modules. To get an accurate specification for available power for modules, it is necessary to calculate a power budget. The PXI-1044 offers 467 W of available power across 14 slots. To calculate the available power for modules, simply take the sum of the current on each rail (A) multiplied by the voltage of that rail (V) (Table 2). The PXI-1044 chassis provides cooling to account for 25 W per slot. The extra power available provides flexibility for a wide range of measurement modules.

Voltage (V)	Current (A) (0 to 55 °C)
+3.3	32
+5	47
+12	7.0
-12	3.5
Available power for modules (W)	467 <sup>1</sup>
Total power (W)	500

<sup>1</sup>Each PXI peripheral slot can cool 25 W.

Table 2. PXI-1044 Power Supply Specifications – Total Power and Available Power for Modules



# General-Purpose 14-Slot Chassis for PXI

## Removable Power Supply Shuttle and Rack-Mount Kits

The PXI-1044 features a field-removable power supply shuttle for easy replacement, with a mean time to repair (MTTR) less than five minutes. The same spare power supply and fan shuttle (P/N 778647-01) is used on the PXI-1044 and PXI-1045. The PXI-1044 offers a 14-slot backplane and a built-in slot blocker to ensure adequate airflow to all PXI modules.

## Safety and EMC Regulatory Compliance

NI PXI chassis undergo rigorous safety and electromagnetic compatibility (EMC) evaluations to ensure compliance with appropriate regulatory requirements. All National Instruments PXI chassis are compliant with CE, FCC, C-Tick and certified third-party safety requirements. Compliance is based on the European Low Voltage and EMC directives, according to safety standards IEC/EN 61010-1 and EMC standards EN 61326 and FCC Part 15. See [ni.com/certification](http://ni.com/certification) for access to certifications, marks and DoCs.



Figure 2. Certification Marks – UL, Demko, CE, and C-Tick

## PXI Factory Installation Services and Global Technical Support

With National Instruments factory installation services (FIS), users receive complete system level functional testing of the PXI chassis, controller, and all peripheral devices, as well as installation of all device drivers and software programs (such as LabVIEW). PXI systems shipped with FIS include the PXI startup utility and a custom hard drive recovery system. With FIS you can use PXI systems right out of the box, and recover to the shipping configuration whenever necessary. All systems purchased with FIS include an additional one-year warranty and calibration services for the system and all modules. In addition, National Instruments offers global technical support of all PXI systems and provides access to a wealth of online Web support information. See [ni.com/pxiadvisor](http://ni.com/pxiadvisor) and [ni.com/support](http://ni.com/support) for more information on FIS and technical support resources.

## Ordering Information

For online configuration of a complete PXI system, including Factory Installation Services, visit [ni.com/pxiadvisor](http://ni.com/pxiadvisor).

### Step 1. Select your chassis.

NI PXI-1044 .....779218-01

### Step 2. Select one or more power cords.

U.S. 120 VAC.....763000-01  
 Japan 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 3. Select additional accessories.

Front rack-mount kit (for 19 in. rack) .....778644-01  
 Rear rack-mount kit (for 19 in. rack) .....778644-02  
 Spare power supply and fan shuttle .....778647-01  
 Filler panel kit<sup>1</sup> (7 single-slot, 1 double-slot,  
 and 1 quadruple slot).....779200-01  
 Slot blockers<sup>2</sup> (2 single-slot) .....778678-01

<sup>1</sup>Every PXI-1044 includes a filler panel kit

<sup>2</sup>Slot blockers are optional for improved thermal performance of your PXI-1044 system. Refer to PXI-1044 user manual for more information.

### Step 4. Select system setup and installation services.

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

NI Factory Installation Services – PXI Systems .....960596-01

## BUY NOW!

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

# General-Purpose 14-Slot Chassis for PXI

## Specifications

### Electrical

#### AC Input

Input voltage range	100 to 240 VAC
Operating voltage range <sup>1</sup>	90 to 264 VAC
Input frequency	50/60 Hz
Operating frequency range <sup>1</sup>	47 to 63 Hz
Input current rating	5 to 10 A
Overcurrent protection	12 A circuit breaker
Line regulation	
3.3 V	<±1%
5 V	<±1%
±12 V	<±1%
Efficiency	70% minimum

<sup>1</sup>guaranteed by design

#### DC Output

DC current capacity ( $I_{MP}$ )

Voltage (V)	$I_{MP}$ (A)
	0 to 55 °C
+3.3	32
+5	47
+12	7.0
-12	3.5

Load regulation

Voltage (V)	Load regulation
+3.3	<0.5%
+12	<0.5%
+5	<0.5%
-12	<0.5%

Maximum ripple and noise (20 MHz bandwidth)

Voltage (V)	Maximum Ripple and Noise (mVpp)
+3.3	<0.5%
+12	<0.5%
+5	<0.5%
-12	<0.5%

### Cooling

Fans	3 fans, 140 cfm, with HIGH/AUTO speed selector
Air-filters	Rear accessible
Per slot cooling capacity	25 W with fan speed set to HIGH
Power supply cooling	Forced air circulation through integrated fan

### Acoustic Emissions

#### Sound pressure level (at operator position)

(tested in accordance with ISO 7779)

Auto Fan (at 25 °C ambient)	48.7 dBA
High Fan	55.5 dBA

#### Sound Power

(tested in accordance with ISO 7779)

AUTO fan (at 25 °C ambient)	58.8 dBA
HIGH fan	66.0 dBA

#### Mean Time to Repair (MTTR) for Power Supply

Power-supply shuttle replacement <5 minutes

### Environmental

Operating location	Indoor use
Maximum altitude	2,000 m (at 25 °C ambient)
Installation category	II
Pollution degree	2

### Operating Environment

Ambient temperature	0 to 55 °C (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)
Relative humidity	10 to 90%, noncondensing (tested in accordance with IEC-60068-2-56.)

### Storage Environment

Ambient temperature	-20 to 70 °C (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)
Relative humidity	5 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; test profile developed in accordance with MIL-PRF-28800F.)
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### 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.)

### Backplane

Size 3U-sized; one system slot (with three system expansion slots) and thirteen peripheral slots.

Compliant with IEEE 1101.10 mechanical packaging.

PXI Specification Revision 2.1 compliant.

Accepts both PXI and CompactPCI (PICMG 2.0 R 3.0) 3U modules.

Backplane bare-board material UL 94 V-0 Recognized

Backplane connectors conforms to IEC 917 and IEC 1076-4-101, and are UL 94 V-0 rated

### 10 MHz System Reference Clock (PXI\_CLK10)

Maximum clock skew between slots	250 ps
Built-in 10 MHz clock Accuracy	±25 ppm (guaranteed over the operating temperature range)
Maximum jitter	5 $ps_{rms}$ in 10 Hz to 1 MHz range
External clock sources Connectors	BNC on rear of chassis (ground referenced) or Slot 2 J2 (pin D17)
Input frequency	10 MHz ±100 ppm or better
Input amplitude rear connector	200 mV <sub>pp</sub> to 5 V <sub>pp</sub> , 10 MHz squarewave or sinewave
Slot 2	5 or 3.3 V, 10 MHz TTL signal
Input impedance	50±5 Ω (rear connector)
Maximum jitter introduced by backplane circuitry	1 $ps_{rms}$ in 10 Hz to 1 MHz range
External clock output Connector	BNC on rear of chassis (ground-referenced)
Output amplitude	1 V <sub>pp</sub> ±20% squarewave into 50 Ω, 2 V <sub>pp</sub> into open circuit
Output impedance	50±5 Ω

### Mechanical

Height	177 mm (6.97 in.)
Width	445.5 mm (17.54 in.)
Depth	434.8 mm (17.12 in.)
Weight	12.6 kg (27.8 lb)

Note 0.57 in. (14.5 mm) is added to height when feet are installed. When tilted with front feet extended on table top, height is increased approximately 2.08 in. (52.8 mm) in front and 0.583 in. (14.8 mm) in rear.

### 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

For UL and other safety certifications, refer to the product label, or visit [ni.com/hardref.nsf](http://ni.com/hardref.nsf), search by model number or product line, and click the appropriate link in the Certification column.

### Electromagnetic Compatibility

Emissions	EN 55011 Class A at 10 m; FCC Part 15A above 1 GHz
Immunity	EN 61326:1997 + A2:2001, Table 1
EMC/EMI	CE, C-Tick, and FCC Part 15 (Class A) Compliant

For EMC compliance, you must operate this device with shielded cabling.

### CE Compliance

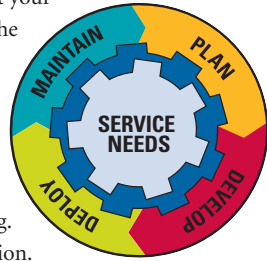
This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

Low-Voltage Directive (safety)	73/23/EEC
Electromagnetic Compatibility Directive (EMC)	89/336/EEC

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](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

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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](http://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](http://ni.com/calibration).

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