PXIe-1065 Specifications

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Contents

PXIe-1065 Specifications

This document contains specifications for the PXIe-1065 chassis.

Caution Specifications are subject to change without notice.

Electrical

AC Input

Input voltage range	100 to 240 VAC
Operating voltage range[1]	90 to 264 VAC
Input current rating	10 to 5 A
Input frequency	50/60 Hz
Operating frequency range	47 to 63 Hz

Over-current protection	12 A circuit breaker
Line regulation	
3.3 V	<±0.2%
5 V	<±0.1%
±12 V	<±0.1%
Efficiency	70% typical
Power disconnect	The AC power cable provides main power disconnect. The front-panel power switch causes the internal chassis power supply to provide DC power to the CompactPCI/PXI Express backplane. You also can use the rear-panel D-SUB 9-pin connector and power mode switch to control the internal chassis power supply.

DC Output

Table 1. DC current capacity (I_{mp})

Voltage	Maximum Current
+3.3 V	60 A
+5 V	50 A
+12 V	45 A
-12 V	4 A
5 V_{AUX}	2.0 A

Note Maximum total usable power is 701.5 W. Maximum combined +3.3 V, +5 V, and +12 V power is 699 W.

Table 2. Backplane slot current capacity

Slot	+5 V	V (I/O)	+3.3 V	+12 V	-12 V	5 V_{AUX}
System Controller Slot	15 A	-	15 A	30 A	-	1 A
System Timing Slot	-	-	6 A	4 A	-	1 A
Hybrid Peripheral Slot with PXI-1 Peripheral	6 A	5 A	6 A	1 A	1 A	-
Hybrid Peripheral Slot with PXI-5 Peripheral	-	-	6 A	4 A	-	1 A
PXI-1 Peripheral Slot	6 A	11 A	6 A	1 A	1 A	-

Note Total system slot current should not exceed 45 A.

Note PCI V(I/O) pins in PXI-1 peripheral slots and hybrid peripheral slots are connected to +5 V.

Note The maximum power dissipated in the system slot should not exceed 140 W.

Note The maximum power dissipated in a peripheral slot should not exceed 38.25 W.

Table 3. Load regulation

Voltage	Load Regulation
+3.3 V	<5%
+12 V	<5%
+5 V	<5%

Voltage	Load Regulation
-12 V	<5%

Table 4. Maximum ripple and noise (20 MHz bandwidth)

Voltage	Maximum Ripple and Noise
+3.3 V	50 mV_{pp}
+12 V	50 mV_{pp}
+5 V	50 mV_{pp}
-12 V	50 mV_{pp}

Over-current protection	All outputs protected from short circuit and overload with automatic recovery
Over-voltage protection, 3.3 V and 5 V	Clamped at 20 to 30% above nominal output voltage
Power supply shuttle MTTR	Replacement in under 5 minutes

Chassis Cooling

Module cooling system	Forced air circulation (positive pressurization) through three 165 cfm fans with High/Auto speed selector
Slot airflow direction	Bottom of module to top of module
Module cooling intake	Bottom rear of chassis

Module cooling exhaust	Along both sides and top of chassis
Power supply cooling system	Forced air circulation through two integrated fans
Power supply cooling intake	Right side of chassis
Power supply cooling exhaust	Left side of chassis

Environmental

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

Indoor use only.

Operating Environment

Ambient temperature range	0 °C to 55 °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	10% to 90%, noncondensing (Tested in accordance with IEC-60068-2-56.)

Storage Environment

Ambient temperature range	–40 °C 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	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. 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 (up to ~30 °C ambient)	45.0 dBA
High fan	63.3 dBA

Sound Power

Auto fan (up to ~30 °C ambient)	55.5 dBA
High fan	76.2 dBA

Safety Compliance Standards

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

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA C22.2 No. 61010-1

Note For safety certifications, refer to the product label or the Product Certifications and Declarations section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards 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 the standards applied to assess the EMC of this product, refer to the ***Online Product Certification*** section.

Note For EMC compliance, operate this device with shielded cabling.

CE Compliance CE

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)
- 2011/65/EU; Restriction of Hazardous Substances (RoHS)
- 2014/53/EU; Radio Equipment Directive (RED)
- 2014/34/EU; Potentially Explosive Atmospheres (ATEX)

Product Certifications and Declarations

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for NI products, visit ni.com/product-certifications, search by model number, and click the appropriate link.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the ***Engineering a Healthy Planet*** web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

EU and UK Customers

- **Waste Electrical and Electronic Equipment (WEEE)**—At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit ni.com/environment/weee.

电子信息产品污染控制管理办法（中国RoHS）

- **中国RoHS**— NI符合中国电子信息产品中限制使用某些有害物质指令(RoHS)。关于NI中国RoHS合规性信息，请登录 ni.com/environment/rohs_china。(For information about China RoHS compliance, go to ni.com/environment/rohs_china.)

Backplane

Size	3U-sized; one system slot (with three system expansion slots) and 17 peripheral slots. Compliant with IEEE 1101.10 mechanical packaging. PXI Express Specification compliant. 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	Conforms to IEC 917 and IEC 1076-4-101, UL 94 V-0 rated

System Synchronization Clocks (PXI_CLK10, PXIe_CLK100, PXIe_SYNC100)

10 MHz System Reference Clock: PXI_CLK10

Maximum slot-to-slot skew	1 ns
Accuracy	±25 ppm max (guaranteed over the operating temperature range)

Maximum jitter	5 ps RMS phase-jitter (10 Hz–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 Ω 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

External 10 MHz Reference Out

(BNC on rear panel of chassis)

Accuracy	±25 ppm max (guaranteed over the operating temperature range)
Maximum jitter	5 ps RMS phase-jitter (10 Hz to 1 MHz range)
Output amplitude	1 V_{PP} ±20% square-wave into 50 Ω, 2 V_{PP} unloaded
Output impedance	50 Ω ±5 Ω

External Clock Source

Frequency	10 MHz ±100 ppm
Input amplitude	
Rear panel BNC	200 mV_{PP} to 5 V_{PP} square-wave or sine-wave
System timing slot PXI_CLK10_IN	5 V or 3.3 V TTL signal
Rear panel BNC input impedance	50 Ω ±5 Ω
Maximum jitter introduced by backplane	1 ps RMS phase-jitter (10 Hz to 1 MHz range)

PXIe_SYNC_CTRL

V_{IH}	2.0 to 5.5 V
V_{IL}	0 to 0.8 V

PXI Star Trigger

Maximum slot-to-slot skew	250 ps
Backplane characteristic impedance	65 Ω ±10%

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

PXI Differential Star Triggers

(PXIe-DSTARA, PXIe-DSTARB, PXIe-DSTARC)

Maximum slot-to-slot skew	150 ps
Maximum differential skew	25 ps
Backplane differential impedance	100 Ω ±10%

For other specifications, the PXIe-1065 complies with the ***PXI-5 PXI Express Hardware Specification***.

Mechanical

Standard chassis dimensions	
Height	6.97 in. (177 mm)
Width	18.30 in. (464.8 mm)
Depth	18.40 in. (467.4 mm)

Weight	28.2 lb (12.8 kg)
Chassis materials	Sheet Aluminum (5052-H32, 3003-H14, and 6061-T6), Extruded Aluminum (6060-T6), and Cold Rolled Steel, PC-ABS, Santoprene, Nylon
Finish	Conductive Clear Iridite on Aluminum Electroplated Nickel on Cold Rolled Steel Polyurethane Enamel

The following figures show the PXIe-1065 chassis dimensions. The holes shown are for the installation of the optional rack mount kits. You can install those kits on the front or rear of the chassis, depending on which end of the chassis you want to face toward the front of the instrument cabinet. Notice that the front and rear chassis mounting holes (size M4) are symmetrical.

Figure 1. PXIe-1065 Chassis Dimensions (Front and Side)

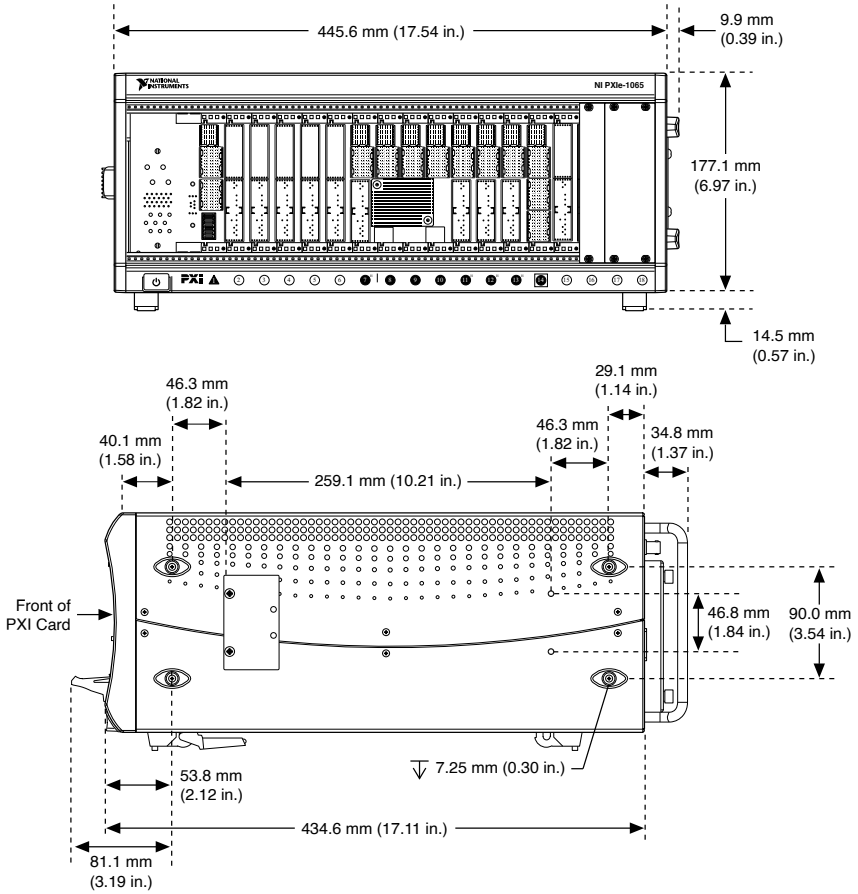


Figure 1. PXIe-1065 Chassis Dimensions (Bottom)

Dimensions are in inches (millimeters)

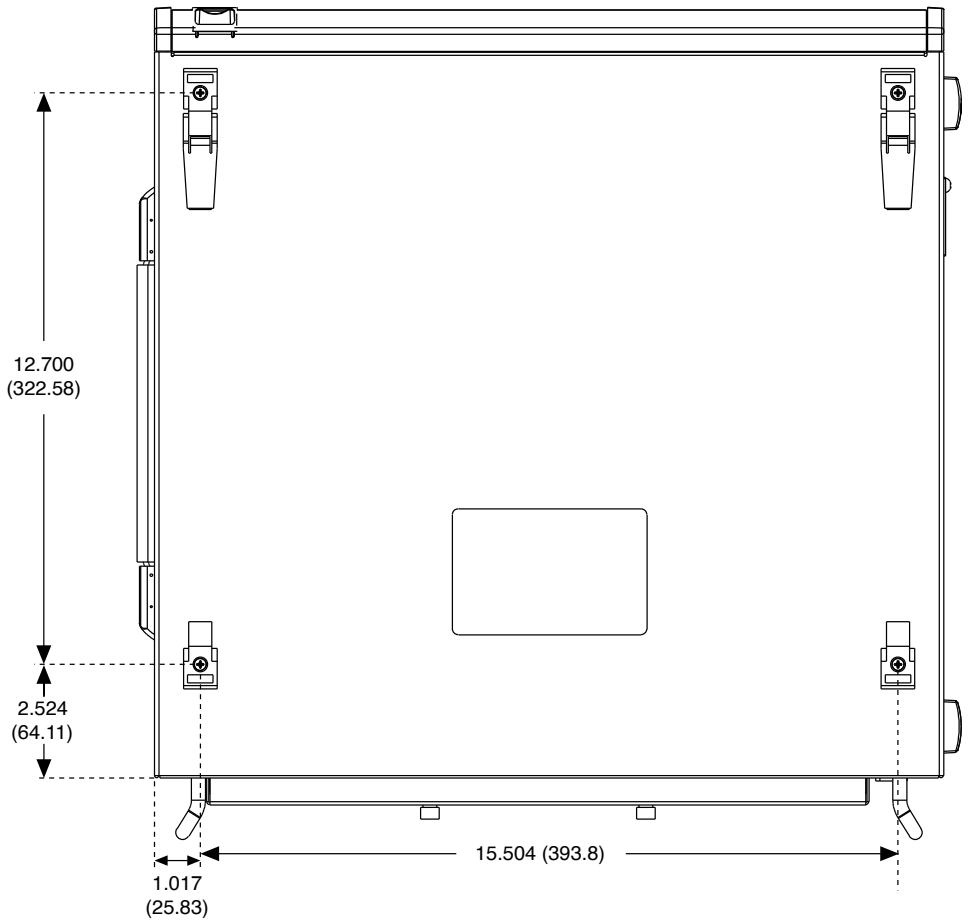
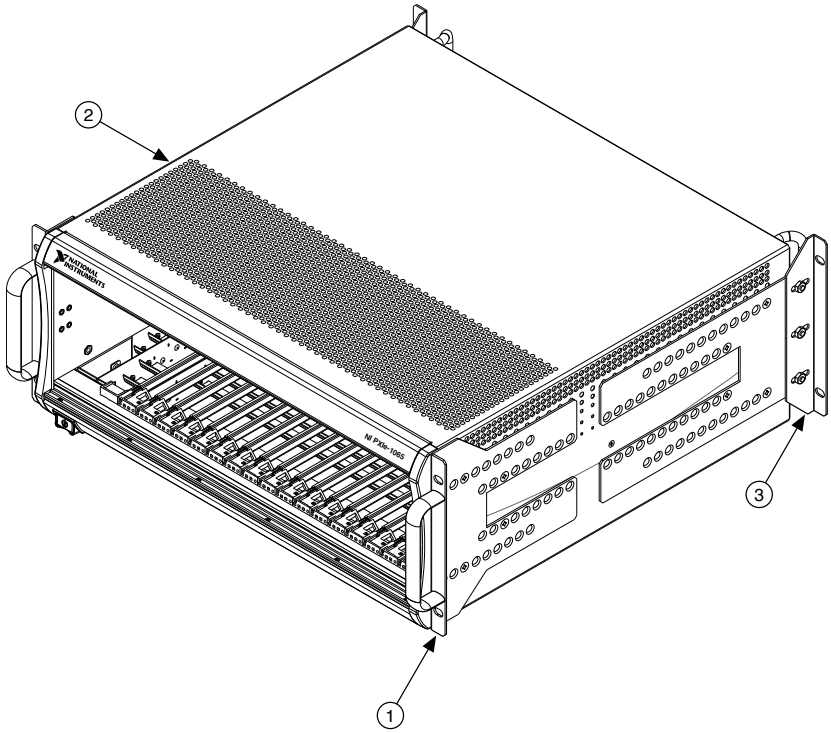


Figure 3. NI Chassis Rack Mount Kit Components



1. Front Rack Mount Kit
2. PXIe-1065 Chassis
3. Optional Rear Rack Mount Kit