PXIe-1085 Specifications

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Contents

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This document contains specifications for the PXIe-1085 chassis.

Caution Specifications are subject to change without notice.

Electrical

The following section provides information about the PXIe-1085 AC input and DC output.

AC Input

Input voltage range	100 to 240 VAC
Operating voltage range[1]	90 to 264 VAC
Input current rating	12 to 6 A
Input frequency	50/60 Hz

Operating frequency range[1]	47 to 63 Hz
Over-current protection	15 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. Do not position the equipment so that it is difficult to disconnect the power cord. 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 8-pin connector and inhibit mode switch to control the internal chassis power supply.

DC Output

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

Voltage	**Maximum Current**	
	PXIe-1085 12 GB/s	**PXIe-1085 24 GB/s**
+3.3 V	60 A	60 A
+5 V	44 A	49 A

Voltage	Maximum Current	
	PXIe-1085 12 GB/s	PXIe-1085 24 GB/s
+12 V	62 A	62 A
-12 V	4 A	4 A
5 V_{AUX}	2 A	2 A

Note Maximum total usable power is for the PXIe-1085 12 GB/s is 791 W. Maximum total usable power for the PXIe-1085 24 GB/s is 775 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%
-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

Remote Inhibit and Voltage Monitoring Connector

Fault output signal

V_{OH}	3.8 V (I_{OH} = -8 mA)

V_{OL}	0.44 V (I_{OH} = 8 mA)

Inhibit input signal

V_{IH}	3.5 V (min)
V_{IL}	1.5 V (max)

Note Internal 10 kΩ pull-up to 5 V_{AUX}.

Chassis Cooling

Module cooling system	Forced air circulation (positive pressurization) through three 169 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)	51.2 dBA
High fan	64.1 dBA

Sound Power

Auto fan (up to ~30 °C ambient)	60.8 dBA
High fan	75.9 dBA

Caution The protection provided by the PXIe-1085 Series can be impaired if it is used in a manner not described in this document.

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

10 MHz System Reference Clock: PXI_CLK10

Maximum slot-to-slot skew	500 ps
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-1085 complies with the ***PXI-5 PXI Express Hardware Specification***.

Mechanical

Standard chassis dimensions	
Height	6.97 in. (177.1 mm)
Width	18.30 in. (464.8 mm)

Depth	19.38 in. (492.3 mm)

Weight	40.3 lb (18.28 kg)
Chassis materials	Sheet Aluminum (5052-H32, 5754-H22), Extruded Aluminum (6063-T5, 6060-T6), Plate Aluminum (6063-T5, 6061-T6), Cold Rolled Steel, Cold Rolled Stainless Steel, Sheet Copper (C110), Santoprene, Urethane Foam, PC-ABS, Nylon, Polycarbonate, Delrin, Polyethylene, Polyamide (FR-106), Neodymium Magnet
Finish	Conductive Clear Iridite on Aluminum, Electroplated Nickel on Cold Rolled Steel, Electroplated Zinc on Cold Rolled Steel, Electroplated Nickel on Copper

The following figures show the PXIe-1085 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-1085 Chassis Dimensions (Front and Side)

Dimensions are in inches (millimeters)

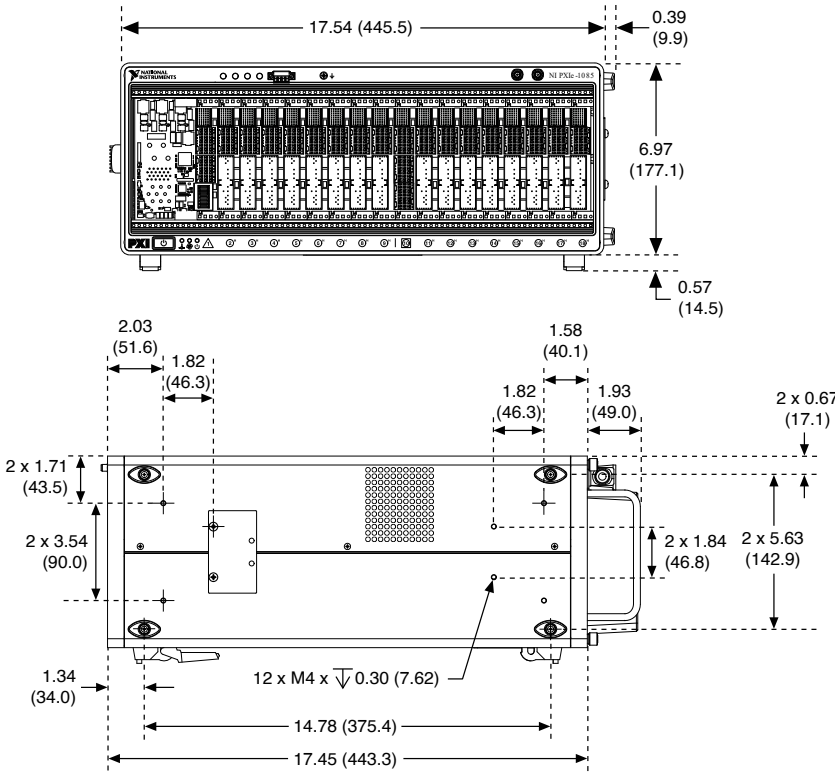


Figure 1. PXIe-1085 Chassis Dimensions (Bottom)

Dimensions are in inches (millimeters)

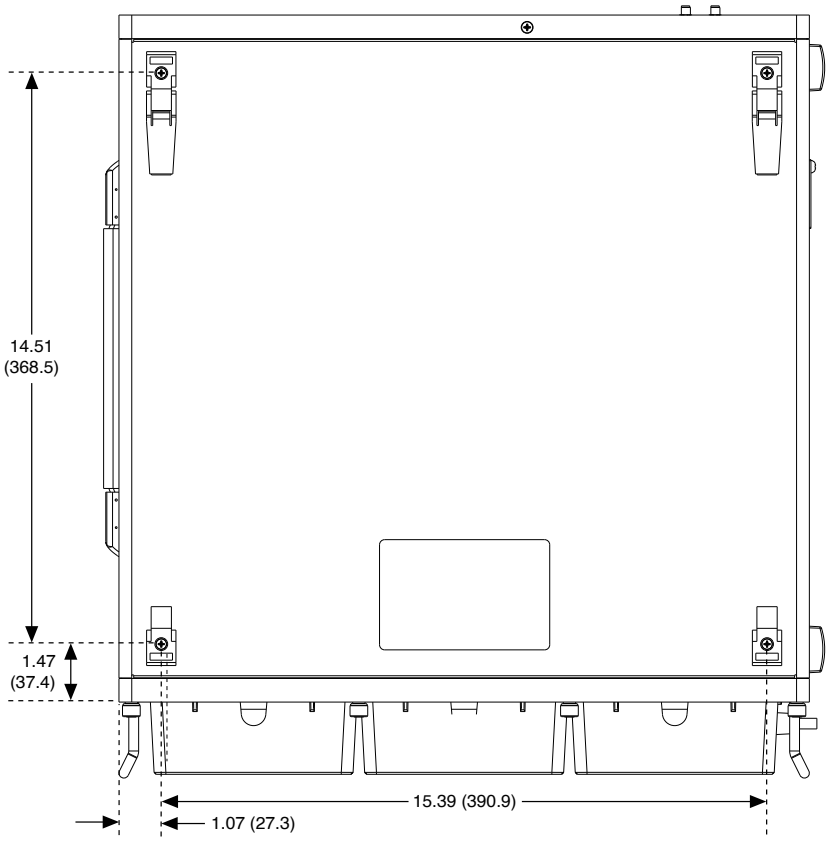
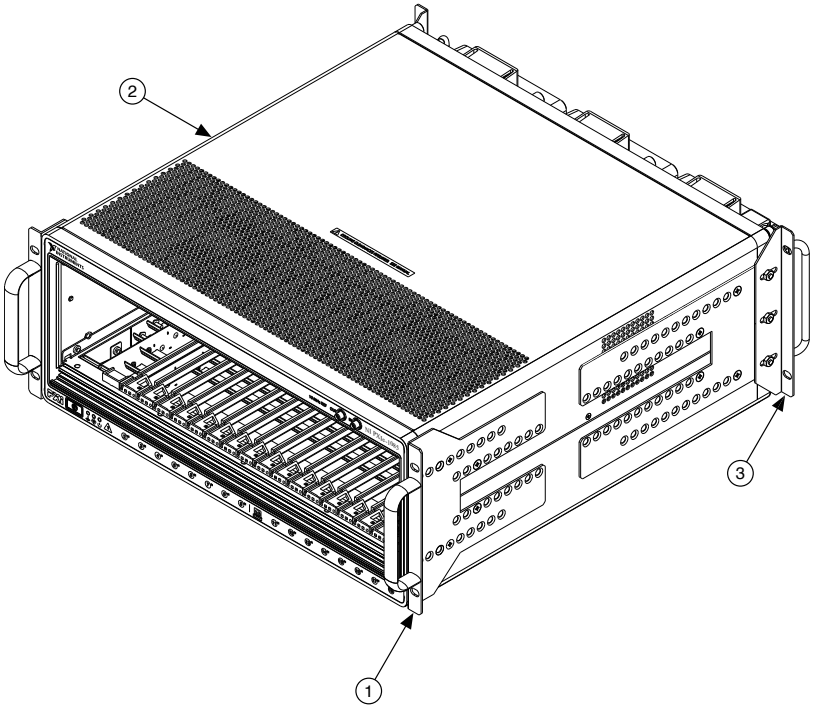


Figure 3. NI Chassis Rack Mount Kit Components



1. Front Rack Mount Kit

2. PXIe-1085 Chassis
3. Rear Rack Mount Kit