PXIe-8820 Specifications

2025-03-10

Contents

PXIe-8820 Specifications

Note Specifications are subject to change without notice.

Caution Using the PXIe-8820 controller in a manner not described in this user manual can impair the protection the controller provides.

Features

CPU	Intel® Celeron® 1020E (2.20 GHz dual-core processor)
On-die L2 cache	2 MB
Single-Channel DDR3 RAM, PC3 10600	2 GB standard, 8 GB maximum
Hard Drive	250 GB Serial ATA, minimum*
Ethernet	10/100/1000 BaseT
PXI Express 4 Link Configuration	x1, x1, x1, x1
PXI Express 2 Link Configuration	x1, x1
Serial Port (RS-232)	Yes (1)
Parallel Port	Yes (1)
Hi-Speed USB (2.0) Ports	Yes (4)
PS/2 Keyboard/Mouse Connector	No
PXI Trigger Bus Input/Output	Yes
Installed Operating System	Windows 7 Professional
*** Controllers configured for LabVIEW RT provide an 80 GB (minimum) SATA hard drive.**	

PXIe-8820 Pinout

This section details the Front Panel pinout for the PXIe-8820.

DisplayPort (DP)

Figure 1. DisplayPort Connector Location and Pinout

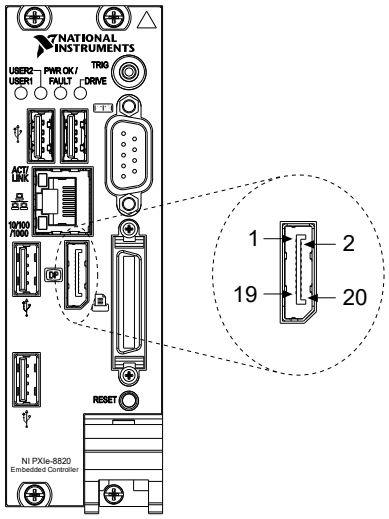


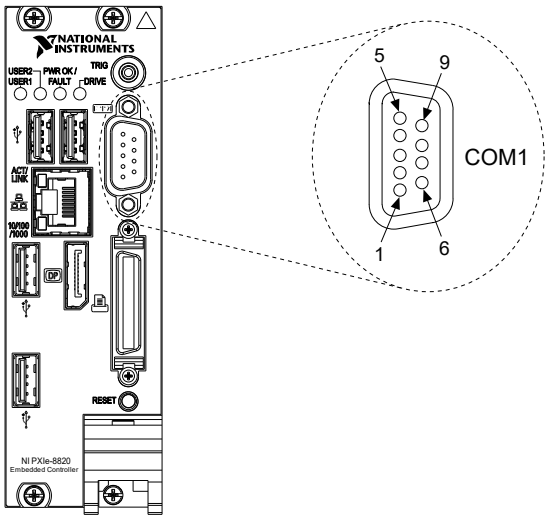
Table 1. DisplayPort Connector Signals

Pin	Signal Name
1	ML_Lane0(p)
2	GND
3	ML_Lane0(n)
4	ML_Lane1(p)
5	GND
6	ML_Lane1(n)
7	ML_Lane2(p)
8	GND
9	ML_Lane2(n)
10	ML_Lane3(p)
11	GND
12	ML_Lane3(n)
13	CONFIG1
14	CONFIG2
15	AUX CH (p)

Pin	Signal Name
16	GND
17	AUX CH (n)
18	Hot Plug Detect
19	Return
20	DP_PWR

COM1 Pinout

Figure 2. COM1 Connector Location and Pinout



Note The pound symbol (#) indicates an active low signal.

Table 2. COM1 Connector Signals

Pin	Signal Name	Signal Description
1	DCD#	Data Carrier Detect
2	RXD#	Receive Data
3	TXD#	Transmit Data
4	DTR#	Data Terminal Ready
5	GND	Ground
6	DSR#	Data Set Ready

Pin	Signal Name	Signal Description
7	RTS#	Ready to Send
8	CTS#	Clear to Send
9	RI#	Ring Indicator

Ethernet Pinout

Figure 3. Ethernet Connector Location and Pinout

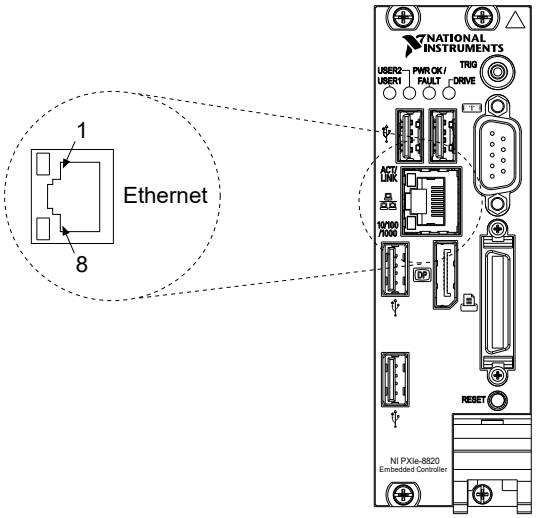
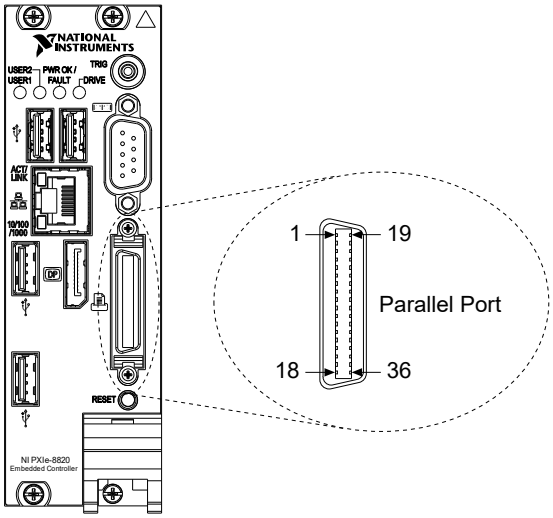


Table 3. Ethernet Connector Signals

Pin	Fast Ethernet	Gigabit Ethernet
1	TX+	TX_A+
2	TX–	TX_A-
3	RX+	RX_B+
4	NC	TX_C+
5	NC	TX_C-
6	RX-	RX_B-
7	NC	RX_D+
8	NC	RX_D-–

Paralell Port Pinout

Figure 4. Parallel Port Connector Location and Pinout



Note The pound symbol (#) indicates an active low signal.

Table 4. Parallel Port Connector Signals

Pin	**Default Configuration (LPT)**	
Signal Name	Signal Description	
1	BUSY	Device Busy
2	SLCT	Select
3	ACK#	Acknowledge
4	FAULT#(ERROR#)	Fault
5	PAPEREND	Paper End
6	PD0	Data Bit 0
7	PD1	Data Bit 1
8	PD2	Data Bit 2
9	PD3	Data Bit 3
10	PD4	Data Bit 4
11	PD5	Data Bit 5
12	PD6	Data Bit 6

Pin	Default Configuration (LPT)	
13	PD7	Data Bit 7
14	INIT#	Initialize Printer
15	STROBE#	Strobe
16	SLCTIN#	Select Input
17	AUTOFD#	Auto Line Feed
18	+5V	+5V
19-35	GND	Ground
36	NC	Not Connected

USB Pinout

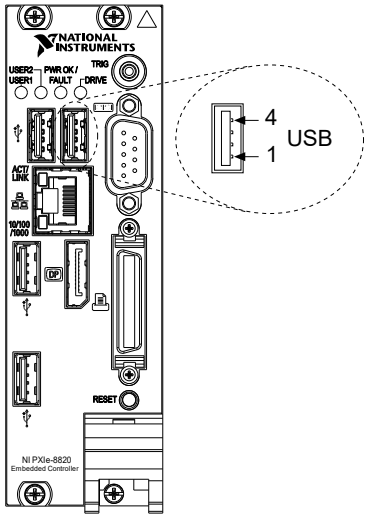


Table 5. USB Connector Signals

Pin	Signal Name	Signal Description
1	VCC	Cable Power (+5V)
2	-Data	USB Data -
3	+Data	USB Data +
4	GND	Ground

Trigger (TRIG) Pinout

Figure 5. Trigger Connector Location and Pinout

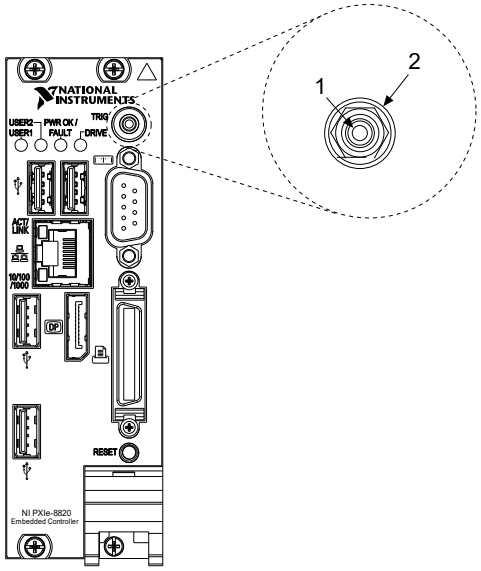


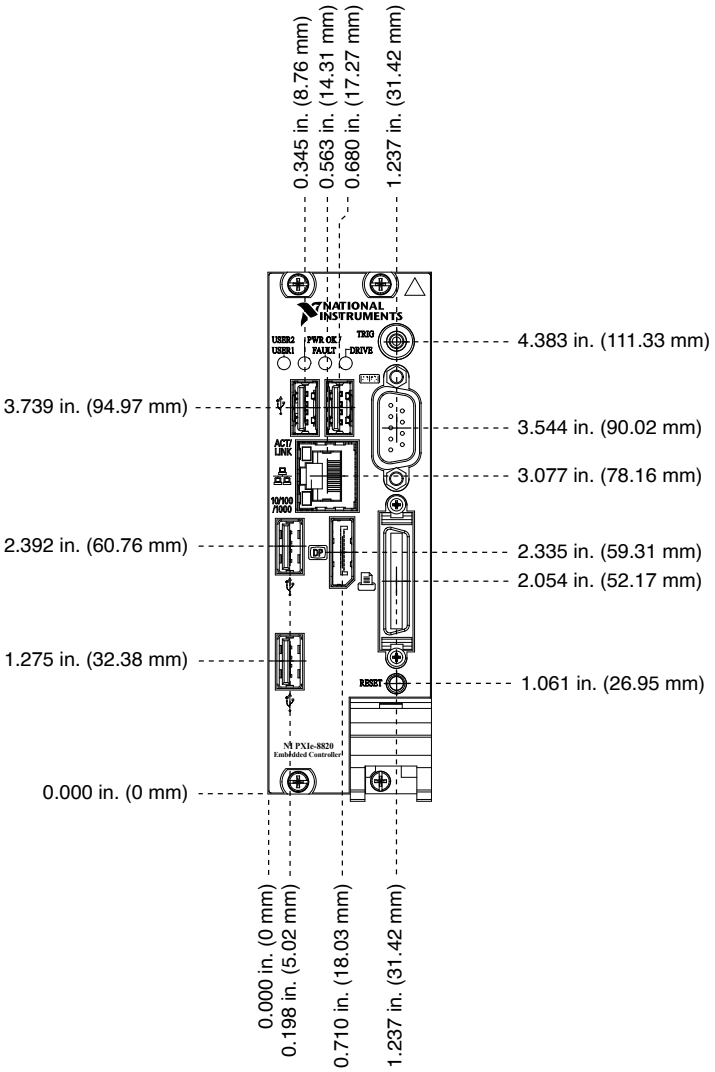
Table 6. Trigger Connector Signals

Pin	Signal Name	Signal Description
1	TRIG	Trigger
2 (Shield)	GND	Ground

Front Panel Dimensions

The following figure shows the front panel layout and dimensions of the PXIe-8820. Dimensions are in inches (millimeters).

Figure 6. PXIe-8820 Front Panel Layout and Dimensions



Electrical

Note Does not include any attached USB devices or ExpressCard.

Voltage (V)	Current (Amps) Typical	Current (Amps) Maximum
+3.3 V	1.9 A	2.4 A
+5 V	0.7 A	1.9 A
+12 V	2.3 A	2.5 A
-12 V	0 A	0 A
+5 V_{Aux}	0.55 A	0.66 A

Physical

Board dimensions	2-slot 3U PXI Express module
Slot requirements	One system slot plus one controller expansion slot
Compatibility	Fully compatible with ***PXI Express Specification*** 1.0
Weight	0.85 kg (1.87 lb) typical

Environmental

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

Indoor use only.

Operating Environment

Caution The operating temperature must not be exceeded, even when used in a chassis with a higher temperature range.

Ambient temperature range	5 °C to 50 °C (Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2. Meets MIL-PRF-28800F Class 3 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 65 °C (Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2. Meets MIL-PRF-28800F Class 3 low temperature limit.)
Relative humidity range	5% to 95%, noncondensing (Tested in accordance with IEC 60068-2-56.)

Shock and Vibration

Operating 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 Hz to 500 Hz, 0.3 g_{rms} (with solid-state hard drive)
Nonoperating	5 Hz 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.)

Safety

This product is designed to meet the requirements of the following standards of safety for information technology equipment:

- IEC 61010-1, EN 61010-1

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

Note For UL and other 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 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- EN 55022 (CISPR 22): Class A emissions
- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.

Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.

Note For EMC declarations and certifications, and additional information, refer to the Product Certifications and Declarations section.

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.

Battery Replacement and Disposal

- **Battery Directive**—This product contains a long-life coin cell battery. If you need to replace it, use the Return Material Authorization (RMA) process or contact an authorized NI service representative. For more information about compliance with the EU Battery Directive 2023/1542 about Batteries and Accumulators and Waste Batteries and Accumulators, visit ni.com/environment/batterydirective.

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`.)

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