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**PXIe-8623**

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# PXle-8623 Specifications

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# PXIe-8623 Specifications

This document lists specifications for the PXIe-8623 4-port, 100/1000BASE-T PXI Automotive Ethernet interface module.

## Definitions

**Warranted** specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

**Characteristics** describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- **Typical** specifications describe the performance met by a majority of models.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

Specifications are **Typical** unless otherwise noted.

## Bus Interface

Form factor	Gen 2 x4 PXI Express, specification rev 1.0 compliant
Slot compatibility	x1 <sup>[1]</sup> , x4, x8 and x16 PXI Express or PXI Express hybrid slots

## Power Requirements

Power rating	
+3.3 V	2.7 A, maximum; 1.9 A, typical

+12 V	1.2 A, maximum; 0.9 A, typical
Rated power	23.3 W, maximum

## Physical Characteristics

Dimensions (not including backplane connectors)	16 cm x 10 cm (6.0 in. x 3.9 in.), 3U CompactPCI slot
Weight	200 g (7.1 oz)
<b>I/O connectors</b>	
Connector type	RJ45
<b>LED indicators</b>	
Ethernet	1 Link/Activity LED and 1 Link Speed LED for each port
Status	1 for each port

## Network Interface

Port configuration	2 Taps or 4 endpoints
<b>Tap latency</b>	
100 Mbit/s	1.8 $\mu$ s (typical)
1 Gbit/s	0.8 $\mu$ s (typical)
Protocols	IEEE 802.3 Raw Ethernet, TCP/IP, UDP/IP, AVB (IEEE 802.1Qav, AVTP), IEEE 802.1AS

Standard	IEEE 802.3 100BASE-TX, 1000BASE-T
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**Note** For information about using Taps and endpoints, refer to the **PXIe-8623 Features**.

## Timing and Synchronization

<b>Network timekeeping</b>	
Timing and synchronization protocol	802.1AS
<b>Network synchronization accuracy</b>	
100BASE-TX	< 1 $\mu$ s
1000BASE-T	< 1 $\mu$ s
<b>Timebases</b>	
Local	100 MHz, shared by all ports, disciplined by PXI_Clk10 if available
Network	x4 125 MHz, 1 per port, independently disciplined by an external grand master (port is configured as a slave) <sup>[2]</sup> or the local timebase (port is configured as a master)
Trigger I/O source	PXI_Trig <0:7>
<b>Trigger capability</b>	
<b>Input</b>	
Timestamps <sup>[3]</sup>	x4 Timestamps, one per port; each captures both local time and network time <sup>[4]</sup>
<b>Output</b>	

Time triggers	x4 Time triggers, one per port; generated from local time or network time
Clocks	<p>x4 1 MHz, one per port; 50% duty cycle; each disciplined by network time</p> <p>x4 1 Hz PPS (pulse per second), one per port; 50% duty cycle; each disciplined by network time</p>



**Note** Clock outputs and time triggers can be exported on any PXI\_Trig<0:7>.

## Environmental Guidelines



**Notice** Failure to follow the mounting instructions in the product documentation can cause temperature derating.



**Notice** This product is intended for use in indoor applications only.

## Environmental Characteristics

<b>Temperature</b>	
Operating	0 °C to 55 °C
Storage	-40 °C to 71 °C
<b>Humidity</b>	
Operating	10% to 90%, noncondensing
Storage	5% to 95%, noncondensing

Pollution Degree	2
Maximum altitude	2,000 m (800 mbar) at 25 °C ambient temperature
<b>Shock and Vibration</b>	
Operating vibration	5 Hz to 500 Hz, 0.3 g RMS
Non-operating vibration	5 Hz to 500 Hz, 2.4 g RMS
Operating shock	30 g, half-sine, 11 ms pulse

## Environmental Standards

This product meets the requirements of the following environmental standards for electrical equipment.

- IEC 60068-2-1 Cold
- IEC 60068-2-2 Dry heat
- IEC 60068-2-78 Damp heat (steady state)
- IEC 60068-2-64 Random operating vibration
- IEC 60068-2-27 Operating shock



**Note** To verify marine approval certification for a product, refer to the product label or visit [ni.com/certification](https://ni.com/certification) and search for the certificate.

## 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.

## EMC Standards

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
- AS/NZS CISPR 11: Group 1, Class A emissions



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

## 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](https://ni.com/product-certifications), search by model number, and click the appropriate link.

<sup>1</sup> Limited performance due to PCIe bandwidth.

<sup>2</sup> If the port is not connected to an 802.1AS network, the network timebase falls back to local time.

<sup>3</sup> Each timestamp can be triggered by any PXI\_Trig <0:7>.

<sup>4</sup> If no external network is available, use local time instead.