PXIe-7975
Specifications

Contents

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Definitions

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

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty. Warranted specifications account for measurement uncertainties, temperature drift, and aging. Warranted specifications are ensured by design or verified during production and calibration.

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.
- **Typical-95** specifications describe the performance met by 95% ($\approx 2\sigma$) of models with a 95% confidence.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.
- **Measured** specifications describe the measured performance of a representative model.

Specifications are **Warranted** unless otherwise noted.

Specifications are **Characteristic** unless otherwise noted.

Specifications are **Typical** unless otherwise noted.

Specifications are **Nominal** unless otherwise noted.

Specifications are **_Measured_** unless otherwise noted.

Reconfigurable FPGA

FPGA	Kintex-7 XC7K410T
LUTs	254,200
DSP48 Slices (25 × 18 Multiplier)	1,540
Embedded Block RAM (kbits)	28,620
Default timebase	40 MHz
Timebase reference sources	PXI Express 100 MHz (PXIe_CLK100)
Timebase accuracy	±100 ppm, 250 ps peak-to-peak jitter
Data transfers	DMA, interrupts, programmed I/O
Number of DMA channels	32

FPGA Digital Input/Output

Number of general-purpose channels	136, configurable as 136 single-ended, 68 differential, or a combination of both[1]

1. The 136 channels span across three FPGA banks.

Channels per bank	
Bank 0/Bank 1	48
Bank 2	40

Compatibility	Configured through the FPGA and based on the attached adapter module; 1.2 V, 1.5 V, 1.8 V, 2.5 V, and 3.3 V I/O standards (refer to xilinx.com).
Protection	Refer to xilinx.com.
Current	Refer to xilinx.com.

Maximum I/O data rates	
Single-ended	400 Mb/s
Differential	1 Gb/s for LVDS
Multi-region clock inputs	6
Single-region clock inputs	5
Connection resources	PXI triggers, PXI_CLK10, PXI star trigger, PXIe_DStarA, PXIe_DStarB, PXIe_DStarC, and PXIe_Sync100

Onboard DRAM

Memory size	2 GB single bank
Theoretical maximum data rate	10.5 GB/s

Bus Interface

Form factor	x4 PXI Express, specification v2.1 compliant

Maximum Power Requirements

Note Power requirements are dependent on the adapter module and contents of the LabVIEW FPGA VI used in your application.

+3.3 VDC (±5%)	3 A
+12 V	3 A

Physical

Dimensions (not including connectors)	18.8 cm × 12.9 cm (7.4 in. × 5.1 in.)
Weight	190 g (6.7 oz)

Maximum Working Voltage

> 🖉 **Note** Maximum working voltage refers to the signal voltage plus the common-mode voltage.

Channel-to-earth	0 V to 3.3 V, Measurement Category I
Channel-to-channel	0 V to 3.3 V, Measurement Category I

> ⚠️ **Caution** Do not use this device for connecting to signals in Measurement Categories II, III, or IV.

Environment

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

Indoor use only.

Operating Environment

Ambient temperature range	0 °C to 40 °C
Relative humidity range	10% to 90%, noncondensing

Storage Environment

Ambient temperature range	-40 °C to 71 °C
Relative humidity range	5% to 95%, noncondensing

Shock and Vibration

Operating shock	30 g peak, half-sine, 11 ms pulse
Random vibration	
Operating	5 Hz to 500 Hz, 0.3 g RMS
Nonoperating	5 Hz to 500 Hz, 2.4 g RMS

Compliance and Certifications

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 61326-1 (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, certifications, and additional information, refer to the Product Certifications and Declarations section.

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）

- ◎⑤◎⑩ **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`.)

NI Services

Visit ni.com/support to find support resources including documentation, downloads, and troubleshooting and application development self-help such as tutorials and examples.

Visit ni.com/services to learn about NI service offerings such as calibration options, repair, and replacement.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

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