PXIe-6569 Safety, Environmental, and Regulatory Information

ni.com

PXIe-6569 Safety, Environmental, and Regulatory Information

1.25 Gbps, 8 PFI, 64 Fixed-Direction LVDS FlexRIO Digital I/O Module

Contents

Safety, Environmental, and Regulatory Information

Read this document before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards. Visit *ni.com/manuals* for more information about your product, including specifications, pinouts, and instructions for connecting, installing, and configuring your system.

Icons

Refer to the following descriptions if one of these icons is marked on your product or used in this guide.

	Notice Take precautions to avoid data loss, loss of signal integrity, degradation of performance, or damage to the product.
	Caution Take precautions to avoid injury. Consult the product documentation for cautionary statements when you see this icon printed on the product. Cautionary statements are localized into French for compliance with Canadian requirements.
	Caution: Hot Surface Take precautions to avoid physical burns.

Safety Guidelines

CAUTION
Observe all instructions and cautions in the user documentation. Using the product in a manner not specified can damage the product and compromise the built-in safety protection.

ATTENTION
Suivez toutes les instructions et respectez toutes les mises en garde de la documentation d'utilisation. L'utilisation du produit de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée.

CAUTION
If the product has been in use, it may exceed safe handling temperatures and cause burns. Allow the product to cool before handling.

ATTENTION
Si le produit a été utilisé, il peut avoir atteint des températures trop élevées pour être manipulé en toute sécurité, ce qui peut provoquer des brûlures. Laissez le produit refroidir avant de le manipuler.

CAUTION
The product is designed for non-hazardous, live signals. You must ensure that all signals connected to the product are isolated from hazardous, live circuits and no unsafe voltages are present at the inputs. Voltages that exceed the specifications could result in damage to the product or electric shock.

ATTENTION
Le produit est conçu pour les signaux en direct non dangereux. Vous devez vous assurer que tous les signaux connectés au produit sont isolés des circuits dangereux sous tension et qu'aucune tension dangereuse n'est présente aux entrées. Des tensions supérieures à celles mentionnées dans les spécifications peuvent endommager le produit ou provoquer un choc électrique.

Safety Voltages

NOTICE
The protection provided by the PXIe-6569 can be impaired if it is used in a manner not described in the user documentation.

SE-to-GND	-0.5 V to +4.6 V
LVDS-to-GND	-0.3 V to +4.0 V

Measurement Category

CAUTION
Do not connect the product to signals or use for measurements within Measurement Categories II, III, or IV.

ATTENTION
Ne pas connecter le produit à des signaux dans les catégories de mesure II, III ou IV et ne pas l'utiliser pour effectuer des mesures dans ces catégories.

WARNING
Do not connect the product to signals or use for measurements within Measurement Categories II, III, or IV, or for measurements on MAINs circuits or on circuits derived from Overvoltage Category II, III, or IV which may have transient overvoltages above what the product can withstand. The product must not be connected to circuits that have a maximum voltage above the continuous working voltage, relative to earth or to other channels, or this could damage and defeat the insulation. The product can only withstand transients up to the transient overvoltage rating without breakdown or damage to the insulation. An analysis of the working voltages, loop impedances, temporary overvoltages, and transient overvoltages in the system must be conducted prior to making measurements.

MISE EN GARDE
Ne pas connecter le produit à des signaux dans les catégories de mesure II, III ou IV et ne pas l'utiliser pour des mesures dans ces catégories, ou des mesures sur secteur ou sur des circuits dérivés de surtensions de catégorie II, III ou IV pouvant présenter des surtensions transitoires supérieures à ce que le produit peut supporter. Le produit ne doit pas être raccordé à des circuits ayant une tension maximale supérieure à la tension de fonctionnement continu, par rapport à la terre ou à d'autres voies, sous peine d'endommager et de compromettre l'isolation. Le produit peut tomber en panne et son isolation risque d'être endommagée si les tensions transitoires dépassent la surtension transitoire nominale. Une analyse des tensions de fonctionnement, des impédances de boucle, des surtensions temporaires et des surtensions transitoires dans le système doit être effectuée avant de procéder à des mesures.

Measurement Category I is for measurements performed on circuits not directly connected to the electrical distribution system referred to as *MAINS* voltage. MAINS is a hazardous live electrical supply system that powers equipment. This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels, special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.

NOTE
Measurement Categories CAT I and CAT O are equivalent. These test and measurement circuits are for other circuits not intended for direct connection to the MAINS building installations of Measurement Categories CAT II, CAT III, or CAT IV.

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 Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) as stated in the product specifications. These requirements and limits are designed to provide reasonable protection against harmful interference when the product is operated in its intended operational electromagnetic environment.

This product is intended for use in commercial and light-industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object, or if the product is used in residential areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Furthermore, any changes or modifications to the product not expressly approved by NI could void your authority to operate it under your local regulatory rules.

EMC Notices

Refer to the following notices for cables, accessories, and prevention measures necessary to ensure the specified EMC performance.

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

NOTICE
Changes or modifications to the product not expressly approved by NI could void your authority to operate the product under your local regulatory rules.

NOTICE
Operate this product only with shielded cables and accessories.

NOTICE
The length of all I/O cables must be no longer than 3 m (10 ft).

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.

NOTE
In Europe, Australia, and New Zealand (per CISPR 11) Class A equipment is intended for use in non-residential locations.

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.

NOTICE
Cover all empty slots using filler panels.

Environmental Characteristics

Temperature	
Operating	0 °C to 55 °C
Storage	-40 °C to 71 °C
Humidity	
Operating	10% RH to 90% RH, noncondensing
Storage	5% RH to 95% RH, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m (800 mbar)(at 25 °C ambient temperature)
Shock and Vibration	
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
- MIL-PRF-28800F
  - Low temperature limits for operation Class 3, for storage Class 3
  - High temperature limits for operation Class 2, for storage Class 3
  - Randon vibration for non-operating Class 3
  - Shock for operating Class 2

NOTE
To verify marine approval certification for a product, refer to the product label or visit *ni.com/certification* and search for the certificate.

Maintenance

Clean the hardware with a soft, nonmetallic brush. Make sure that the hardware is completely dry and free from contaminants before returning it to service.

Maximum Power Requirements

NOTE
Power requirements are dependent on the contents of the LabVIEW FPGA VI used in your application.

+3.3 V	2.0 A
+12 V	4.0 A
Maximum total power	58 W

NOTE
For applications requiring >38 W, the PXIe-6569 must be installed in a ≥58 W-capable chassis.

Physical Characteristics

Dimensions	2.0 cm × 12.9 cm × 20.0 cm(0.8 in. × 5.1 in. × 7.9 in.)
Weight	495 g (17.5 oz)

Export Compliance

This product is subject to control under the U.S. Export Administration Regulations (15 CFR Part 730 et. seq.) administered by the U.S. Department of Commerce's Bureau of Industry and Security (BIS) (*www.bis.doc.gov*) and other applicable U.S. export control laws and sanctions regulations. This product may also be subject to additional license requirements of other countries' regulations.

Additionally, this product may also require export licensing before being returned to NI. The issuance of a Return Material Authorization (RMA) by NI does not constitute export authorization. The user must comply with all applicable export laws prior to exporting or re-exporting this product. See *ni.com/legal/export-compliance* for more information and to request relevant import classification codes (e.g. HTS), export classification codes (e.g. ECCN), and other import/export data.

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.)

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.

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.

NI corporate headquarters is located at 11500 N Mopac Expwy, Austin, TX, 78759-3504, USA.

2022-06-17