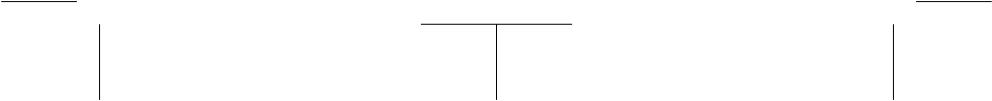


**PXIe-5655 Safety,
Environmental, and
Regulatory Information**

PXIe, 7.2 GHz PXI RF
Analog Signal Generator



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



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: Possibility of Electric Shock —Take precautions to avoid electrical shock.



ESD Sensitive —Take precautions to avoid damaging the product with electrostatic discharge.

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.

Safety Voltages

Connect only voltages that are below these limits.

Absolute maximum input power (LO 0/1 IN) +17 dBm

PXle-5655 Safety, Environmental, and Regulatory Information

Absolute maximum reverse power (LO 0/1 OUT)	+18 dBm
Maximum input voltage (REF IN)	3.3 V pk-pk
Measurement Category	CAT I/O

Measurement Category



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

The performance of this product can be disrupted if subjected to Electrostatic Discharge (ESD) during operation. To prevent damage, industry-standard ESD prevention measures must be employed during installation, maintenance, and operation.



NOTICE

This product may become more sensitive to electromagnetic disturbances in the operational environment when test leads are attached or when the product is connected to a test object.



NOTICE

Operate this product only with shielded cables and accessories. Do not use unshielded cables or accessories unless they are installed in a shielded enclosure with properly designed and shielded input/output ports and connected to the product using a shielded cable. If unshielded cables or accessories are not properly installed and shielded, the EMC specifications for the product are no longer guaranteed.



NOTICE

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



NOTICE

You must install PXI EMC Filler Panels, NI part number 778700-01, in all open chassis slots.

Electromagnetic Compatibility 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 (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

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

Environmental Guidelines



NOTICE

This model is intended for use in indoor applications only.

Environmental Characteristics

Temperature and Humidity

Temperature	
Operating	
Chassis with slot cooling capacity $\geq 58\text{ W}^1$	0 °C to 55 °C
Chassis with slot cooling capacity $\geq 38\text{ W}^2$	0 °C to 40 °C
Humidity	
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)

¹ Tested with chassis fan mode set to Auto and cooling profile set to 58 W/82 W in NI Measurement & Automation Explorer (MAX). Not all chassis with slot cooling capacity $\geq 58\text{ W}$ can achieve this ambient temperature range. Refer to PXI chassis specifications to determine the ambient temperature ranges your chassis can achieve.

Shock and Vibration

Random vibration	
Operating	5 Hz to 500 Hz, 0.3 g RMS
Non-operating	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 ¹

² For chassis with slot cooling capacity = 38 W, the fan speed must be set to HIGH for use in this ambient temperature range.

- High temperature limits for operation Class 4, for storage Class 3 ²
- Random vibration limits for non-operating Class 3
- Shock limits 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.

Power Requirements

+3.3 V DC	1.1 A, typical
+12 V DC	2.4 A, typical

Physical Characteristics

Dimensions	1U, one-slot PXI Express module 2.05 cm × 12.9 cm × 21.1 cm (0.9 in. × 5.6 in. × 8.3 in.) For more information, visit ni.com/dimensions and search by module number.
Weight	570 g (20.1 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.

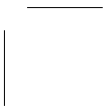
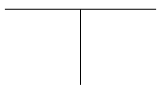
NI Services

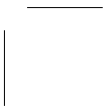
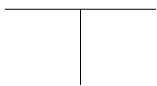
Visit ni.com/support to find support resources including documentation, downloads, and troubleshooting and application development self-help such as tutorials and examples.

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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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