

SAFETY, ENVIRONMENTAL, AND REGULATORY INFORMATION

PXIe-5841

6 GHz, 1 GHz Bandwidth, RF PXI Vector Signal Transceiver

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment 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.

Icons



Notice Take precautions to avoid data loss, loss of signal integrity, degradation of performance, or damage to the model.



Caution Take precautions to avoid injury. Consult the model documentation for cautionary statements when you see this icon printed on the model. Cautionary statements are localized into French for compliance with Canadian requirements.



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

Safety



Caution Observe all instructions and cautions in the user documentation. Using the model in a manner not specified can damage the model and compromise the built-in safety protection. Return damaged models to NI for repair.



Attention Suivez toutes les instructions et respectez toutes les mises en garde de la documentation utilisateur. L'utilisation d'un modèle de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée. Renvoyez les modèles endommagés à NI pour réparation.



Caution The protection provided by the model can be impaired if it is used in a manner not described in the user documentation.



Attention La protection apportée par le modèle risque d'être endommagée s'il est utilisé d'une autre façon que celle décrite dans la documentation utilisateur.



Caution All wiring must be insulated for the highest voltage used.



Attention Tout le câblage doit être isolé pour la plus haute tension utilisée.

Safety Voltages

Connect only voltages that are below these limits.

Absolute maximum input power (RF IN)

<120 MHz	+24 dBm (CW RMS)
≥120 MHz	+33 dBm (CW RMS)

Absolute maximum reverse power (RF OUT)

<120 MHz	+24 dBm (CW RMS)
≥120 MHz	+33 dBm (CW RMS)

Absolute maximum input power (LO IN (RF IN/RF OUT))

	+15 dBm
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Maximum input power (REF IN)

	3.3 V pk-pk
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Absolute maximum input range (PFI 0)

	-0.5 V to 5.5 V
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Absolute maximum input range (DIO)

	-0.5 V to 4.5 V
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Absolute maximum input range (MGT)

	2 V pk-pk ¹
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Measurement Category

	CAT I/O
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Caution Do not connect the PXIe-5841 to signals or use for measurements within Measurement Categories II, III, or IV.

¹ Absolute maximum levels at input, prior to AC coupling capacitors.



Attention Ne connectez pas le PXIe-5841 à des signaux et ne l'utilisez pas pour effectuer des mesures dans les catégories de mesure II, III ou IV.

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 UL and other safety certifications, refer to the product label or the [Product Certifications and Declarations](#) section.

Electromagnetic Compatibility 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 or when the product is connected to a peripheral device or a test object. 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.

General EMC Notices



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.

ESD Notices



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.

Shielded Cable Notices



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.

Cable Length Notices



Notice The length of any cable connected to the input port(s) must be no longer than 3 m (10 ft).

Miscellaneous Accessory and Device Notices



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
- FCC 47 CFR Part 15B: Class A emissions
- ICES-003: 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 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.

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 $\geq 58 \text{ W}^2$	0 °C to 55 °C
All other compatible chassis ³	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)

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 3²
 - High temperature limits for operation Class 4, for storage Class 3³
 - 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}	3.3 A
+12 V _{DC}	5.8 A

Physical Characteristics

Dimensions

Length	4.1 cm (1.6 in.)
Width	12.9 cm (5.6 in.)
Height	21.1 cm (8.3 in.)

² 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.

³ For chassis with slot cooling capacity = 38 W, the fan speed must be set to HIGH to achieve this ambient temperature range.

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.

CE Compliance

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)
- 2011/65/EU; Restriction of Hazardous Substances (RoHS)

Export Compliance

This model 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 model may also be subject to additional license requirements of other countries' regulations.

Additionally, this model 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 model. 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.

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.

Additional Resources

Visit ni.com/manuals for more information about your model, including specifications, pinouts, and instructions for connecting, installing, and configuring your system.

Worldwide Support and Services

The NI website is your complete resource for technical support. At ni.com/support, you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit ni.com/services for information about the services NI offers.

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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