

## SAFETY, ENVIRONMENTAL, AND REGULATORY INFORMATION

### USRP-2950/2952/2953/2954/2955

Up to 160 MHz Bandwidth, 2x2 Channels, Ethernet and PCIe, GPS-Disciplined OCXO, USRP Software Defined Radio Reconfigurable Device

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.

## Regulatory Icons

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**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.



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

## Safety

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**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.

## 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 and Radio Equipment Compatibility Guidelines

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This product was designed to support an efficient use of the radio spectrum to avoid harmful interference. 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.

## Electromagnetic and Radio Performance Notices

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






**Notice** Operate this product only with shielded cables and accessories. The DC power input cables may be unshielded.

- **Notice** To ensure the specified electromagnetic and radio performance, the length of all I/O cables except those connected to the Ethernet and GPS antenna ports must be no longer than 3 m.
- **Notice** This product is not approved or licensed for transmission over the air using an antenna. As a result, operating this product with an antenna may violate local laws. This product is approved for signal reception using a GPS antenna in the appropriate port. Ensure that you are in compliance with all local laws before operating this product with an antenna other than a GPS receive antenna.
- **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.

## 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 non-residential locations.
- **Note** For EMC declarations, certifications, and additional information, refer to the [Product Certifications and Declarations](#) section.


## Radio Equipment Compatibility Standards

This product meets the requirements of the following Radio Equipment standards:


- ETSI EN 301 489-1: Common Technical Requirements for Radio Equipment
- ETSI EN 301 489-19: Specific conditions for GNSS receivers operating in the RNSS band (ROGNSS) providing positioning, navigation, and timing data
- ETSI EN 303 413: Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS) receivers

This radio equipment is for use in accordance with the following parameters:

Antenna	5 V GPS receiver antenna, part number 783480-01
Software	LabVIEW, LabVIEW NXG, LabVIEW Communications System Design Suite
Frequency band(s)	1,575.42 MHz

- **Notice** Every country has different laws governing the transmission and reception of radio signals. Users are solely responsible for using their USRP system in compliance with all applicable laws and regulations. Before you attempt to transmit and/or receive on any frequency, National Instruments recommends that you determine what licenses may be required and what restrictions may apply. National Instruments does not accept any responsibility for the user's use of our products. The user is solely responsible for complying with local laws and regulations.

## Environmental Guidelines

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

## Environmental Characteristics

Operating temperature	0 °C to 45 °C
Operating humidity	10% to 90% relative humidity, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)

## 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 *Commitment to the Environment* 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.

## Waste Electrical and Electronic Equipment (WEEE)



- **EU Customers** 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）

 **中国客户** National Instruments 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 National Instruments 中国 RoHS 合规性信息，请登录 [ni.com/environment/rohs\\_china](https://ni.com/environment/rohs_china)。(For information about China RoHS compliance, go to [ni.com/environment/rohs\\_china](https://ni.com/environment/rohs_china).)

## Power Requirements

Input voltage	9 V to 16 V, DC
Input current	7.5 A, maximum
Typical power consumption	38 W to 44 W, varies by application

- **Caution** You must use an LPS or Class 2 power supply with the device. The power supply must also meet any safety and compliance requirements for the country of use.
- **Attention** Vous devez utiliser avec l'appareil une alimentation LPS ou de classe 2. L'alimentation doit également satisfaire aux exigences de sécurité et de conformité en vigueur dans le pays d'utilisation.

## Physical Characteristics

Physical dimensions	
(L × W × H)	26.67 cm × 4.06 cm × 21.84 cm (10.5 in. × 1.6 in. × 8.6 in.)
Weight	1.588 kg (3.50 lb)

## Maintenance

If you need to clean your device, wipe it with a dry towel.

## CE Compliance

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

- 2014/53/EU; Radio Equipment Directive (RED)
- 2011/65/EU; Restriction of Hazardous Substances (RoHS)

## Product Certifications and Declarations

Hereby, National Instruments declares that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. 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.

## Additional Resources

Visit [ni.com/manuals](https://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](https://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](https://ni.com/services) for information about the services NI offers.

Visit [ni.com/register](https://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 North Mopac Expressway, Austin, Texas, 78759-3504. NI also has offices located around the world. For support in the United States, create your service request at [ni.com/support](https://ni.com/support) or dial 1 866 ASK MYNI (275 6964). For support outside the United States, visit the *Worldwide Offices* section of [ni.com/niglobal](https://ni.com/niglobal) to access the branch office websites, which provide up-to-date contact information.

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