USRP-2930 Specifications

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Definitions

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

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.
- ***Nominal*** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

Specifications are ***Characteristics*** unless otherwise noted.

Conditions

Specifications are valid at 25 °C unless otherwise noted.

Transmitter

Frequency range	50 MHz to 2.2 GHz
Frequency step	<1 kHz
Maximum output power (P_{out})	
50 MHz to 1.2 GHz	50 mW to 100 mW (17 dBm to 20 dBm)

1.2 GHz to 2.2 GHz	30 mW to 70 mW (15 dBm to 18 dBm)
Gain range[1]	0 dB to 31 dB
Gain step	1.0 dB
Maximum instantaneous real-time bandwidth[2]	
16-bit sample width	20 MHz
8-bit sample width	40 MHz
Maximum I/Q sample rate[3]	
16-bit sample width	25 MS/s
8-bit sample width	50 MS/s
Digital-to-analog converter (DAC)	2 channels, 400 MS/s, 16 bit
DAC spurious-free dynamic range (sFDR)	80 dB

1. The output power resulting from the gain setting varies over the frequency band and among devices.
2. Instantaneous bandwidth depends on many factors including, but not limited to, network configuration and host computer performance. Actual data throughput may be chipset dependent.
3. I/Q sample rate depends on many factors including, but not limited to, network configuration and host computer performance. Actual data throughput may be chipset dependent.

Receiver

Frequency range	50 MHz to 2.2 GHz
Frequency step	<1 kHz
Gain range[4]	0 dB to 31.5 dB
Gain step	0.5 dB
Maximum input power (P_{in})	0 dBm
Noise figure	5 dB to 7 dB
Maximum instantaneous real-time bandwidth[5]	
16-bit sample width	20 MHz
8-bit sample width	40 MHz
Maximum I/Q sample rate[6]	
16-bit sample width	25 MS/s
8-bit sample width	50 MS/s

4. The received signal amplitude resulting from the gain setting varies over the frequency band and among devices.
5. Instantaneous bandwidth depends on many factors including, but not limited to, network configuration and host computer performance. Actual data throughput may be chipset dependent.
6. I/Q sample rate depends on many factors including, but not limited to, network configuration and

Analog-to-digital converter (ADC)	2 channels, 100 MS/s, 14 bit
ADC sFDR	88 dB

GPS Disciplined Oscillator (GPSDO)

Frequency accuracy[7]	
OCXO (not locked to GPS)	25 ppb
OCXO (locked to GPS)	10 ppb
Active antenna	
Voltage	5 V
Power	0.7 W

Power

Total power, typical operation	
Typical	12 W to 15 W
Maximum	18 W

host computer performance. Actual data throughput may be chipset dependent.

7. ***Frequency accuracy*** is based on oven-controlled crystal oscillator (OCXO) vendor specifications and is not measured. Alternatively, you can incorporate an external reference source to provide a more precise frequency Reference Clock and to achieve better frequency accuracy.

Power requirement	Accepts a 12 W–15 W, 18 W maximum external DC power connector

Note You must use either the power supply provided in the shipping kit, or another UL listed ITE power supply marked ***LPS***, with the USRP-2930.

Physical Characteristics

Physical dimensions	
(L × W × H)	15.875 cm × 4.826 cm × 21.209 cm (6.25 in. × 1.9 in. × 8.35 in.)
Weight	1.193 kg (2.63 lb)

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 55 °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）

- **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`.)