USRP-2954 Specifications

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The USRP-2954 contains a GPS-disciplined oscillator (GPSDO), which enables you to lock the internal clocks to a GPS reference signal, synchronize using GPS timing information, and query GPS location information.

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

Number of channels	2
Frequency range	10 MHz to 6 GHz
Frequency step	<1 kHz
Maximum output power (P_{out}), 10 MHz to 4 GHz	50 mW to 100 mW (17 dBm to 20 dBm)
Maximum output power (P_{out}), 4 GHz to 6 GHz	5 mW to 50 mW (7 dBm to 17 dBm)

Gain range[1]	0 dB to 31.5 dB
Gain step	0.5 dB
Maximum instantaneous real-time bandwidth[2]	160 MHz
Maximum I/Q sample rate	200 MS/s
Digital-to-analog converter (DAC) resolution	16 bit

Receiver

Number of channels	2
Frequency range	10 MHz to 6 GHz
Frequency step	<1 kHz
Gain range[3]	0 dB to 37.5 dB
Gain step	0.5 dB
Maximum input power (P_{in})	-15 dBm
Noise figure	5 dB to 7 dB
Maximum instantaneous real-time bandwidth[4]	160 MHz
Maximum I/Q sample rate	200 MS/s
Analog-to-digital converter (ADC) resolution	14 bit

GPS Disciplined Oscillator (GPSDO)

Table 2. Frequency Accuracy

OCXO (not locked to GPS)	25 ppb
OCXO (locked to GPS)	5 ppb

1. The output power resulting from the gain setting varies over the frequency band and among devices.
2. The USRP-2954 transmitter path has 160 MHz of bandwidth throughout the full frequency range of the device.
3. The received signal amplitude resulting from the gain setting varies over the frequency band and among devices.
4. The USRP-2954 receiver path has 84 MHz of bandwidth for center frequencies from 10 MHz to 500 MHz.

Note ***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.

Table 2. Active Antenna

Voltage	5 V
Power	0.7 W

Note NI recommends periodically locking the GPS for at least 1 hour to recalibrate the GPSDO module accuracy.

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.

Onboard DRAM

Memory size	1,024 MB

Physical Characteristics

Table 3. 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)

Environment

Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)
Pollution Degree	2

Indoor use only.

Operating Environment

Operating temperature	23 °C ± 5 °C
Relative humidity range	10% to 90%, noncondensing (tested in accordance with IEC 60068-2-56)