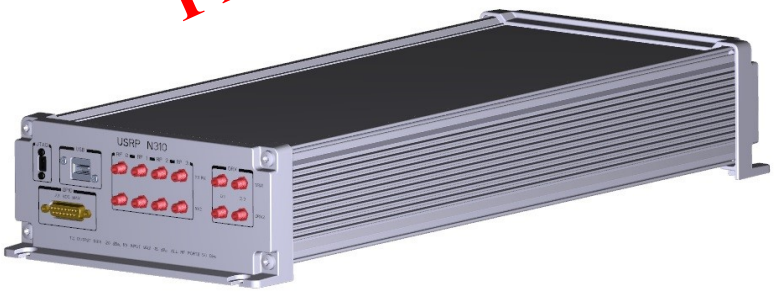
Ruggedized and Weatherproof SDR Platforms

RN310

Preliminary



KEY FEATURES

- Ruggedized version of National Instruments (Ettus Research brand) N310 Series Software Defined Radio
- Conduction-cooled construction optionally designed to meet MIL 810 for shock/ vibration and MIL 461 for EMI
- IP67 weather-resistant sealed unit, MIL-grade design version optional
- Other similar National Instruments (NI) small form factor SDR versions are available upon request
- Customizable I/O options
- Anti-vandal pushbutton on/off switch
- Pole-mount and other mounting options available
- Contact Pixus for ruggedization options for other NI SDRs

The Pixus Technologies RN310 is a ruggedized version of National Instruments (Ettus Research brand) N310 Software Defined Radio. Working with NI, Pixus redesigned the commercial version of the product to create a hardened, sealed, conduction-cooled unit to meet IP67 specifications. There are options to further ruggedize the unit to MIL 810 for shock/vibration and MIL 461 for EMI.

The NI USRP N310 is one of the highest channel density devices in the SDR market, offering four RX and four TX channels in a half-wide RU form factor. The RF front end uses two AD9371 transceivers from Analog Devices. Each channel provides up to 100 MHz of instantaneous bandwidth and covers an extended frequency range from 10 MHz to 6 GHz.

Contact Pixus for ruggedization inquiries for other SDRs from NI. Visit www.ettusresearch.com for SDR specifications.

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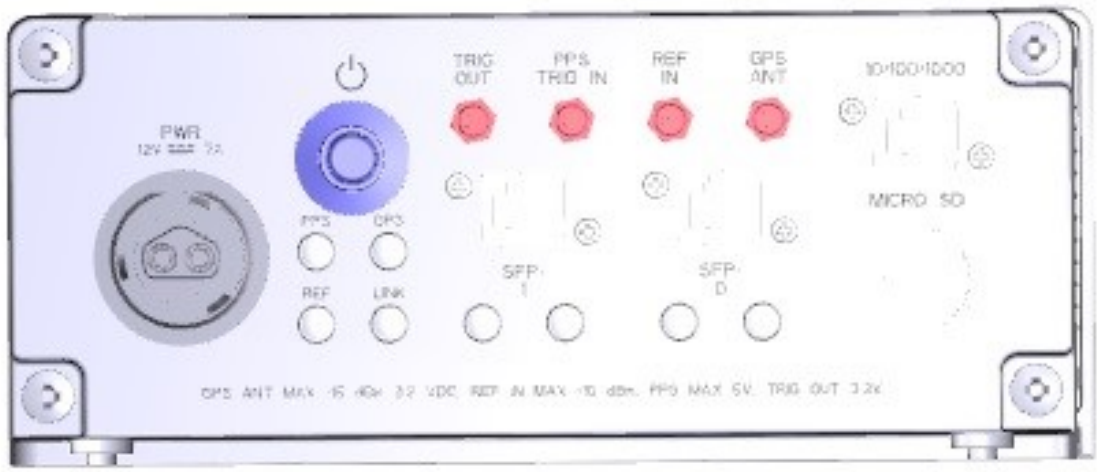
I/O Configurations & Power

Pixus offers a standard I/O configuration for the IP67 RN310 (see below) and other SDRs. The modular front and rear faceplates are also customizable. Consult Pixus to discuss your specific requirement. The RN310 comes with a loose connector that can be terminated by the user to the application's power source (via crimp or solder). For powering the unit in a lab/test environment, see P/N SPS0006 in the Accessories section. Please note that the MIL rugged version requires modification to the I/O details below. The unit standardly runs on 12V power. For versions that require an internal heater for low-temp applications, the power will utilize 24V.

Front I/O



Rear I/O

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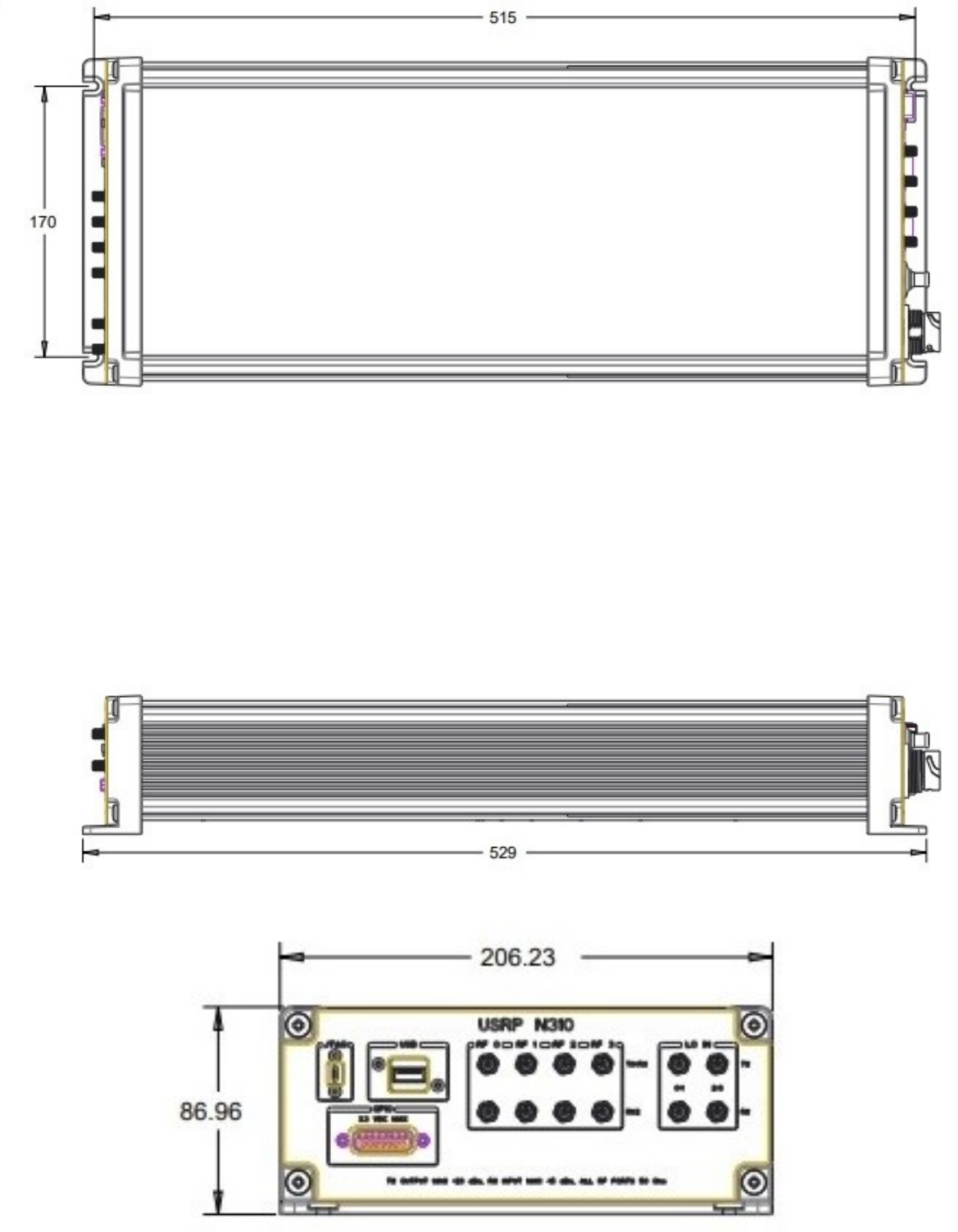
Drawings—IP67



The drawings above are for the IP67 version. The MIL-spec version is slightly larger (contact factory for details).

Ruggedized and Weatherproof SDR Platforms

Ruggedization Levels

The RX310 was initially designed to meet IP67 waterproof specifications in a rugged, conduction-cooled design. The unit standardly meets –20C to 50C temperature ranges with the powerful Kintex FPGA installed. There are options to extend the temp range to +70C with an external fan or with customization. Alternatively, if a lower-power FPGA is selected, the higher ambient temperature range can also be met.

To meet MIL specifications for shock/vibration, there are modifications required to utilize 38999 connectors and internal bracing. Pixus also offers a light-rugged solution providing –20C to +70C temperature range and transport grade shock/vibration levels in an air-cooled configuration.

The RB210 is a chassis platform for the end customer/integrator to incorporate their software, interface, and mounting options. As such, it is up to the integrator to provide end application testing to the applications' requirements. Pixus will guarantee that we will meet agreed upon ruggedization levels. Contact Pixus for more details or to discuss co-testing options.

	Air cooled	Conduction cooled	Shock/vibration	IP 67	Environmental/EMI
Light-rugged	Temp: - 20C to 70C	N/A	Transport grade	N/A	Not sealed. Various EMI level options.
Rugged, not MIL-grade	Optional External IP67 fan Temp: - 40C to 70C	Temp: - 40C to 50C	~ 15G shock, above Transport grade	Yes	Fully sealed, MIL461 EMI
MIL Spec Rugged	Custom only Temp: - 40C to 70C	Temp: - 40C to 70C with external MIL fan, otherwise - 40C to 50C	~ 20-25G shock, meet various MIL810 specs	IP66/ IP67 optional	Fully sealed, MIL461 EMI

Specification Notes

Interface Connectors

Pixus provides the mating connectors to the external I/O interfaces except for the fiber connector. Contact Pixus to discuss what mating fiber connector options are available by 3rd parties.

Ruggedized and Weatherproof SDR Platforms

ORDERING OPTIONS

RN310-ABC-DEF-XX

A = Type

0 = Standard RN310 board
1 = Other

B = I/O Configuration

0 = Standard IP67 version as shown page 2
1 = Other

C = Ruggedization Level

0 = IP67 weather-resistant (standard)
1 = Semi-Rugged, air cooled w/filter
2 = Reserved
3 = MIL 810/410 Rugged, IP67
4 = Other

D = Light Indicator Setting

0 = Light indicators connected, lit
1 = Light indicators not connected, dark

E = Mounting

0 = Standard
1 = Other

F = Heater/Fan Installation

0 (or blank) = no heater or fan installed, 12V power
1 = Internal heater installed for low-temp apps, 24V power
2 = External fan for high temp apps, 24V power

2 digit customization code

Blank = standard, no customization

ACCESSORIES

Power Supply Kit P/N: SPS0006

The SPS0006 comes with a C13 IEC inlet for AC input and an RX310 compatible connector for the DC output. The part number for the air cooled version is SPS0009. https://www.ettus.com/all-products/12v-pwr/