

# Ruggedized and Weatherproof SDR Platforms



## RB210



**Preliminary**

### KEY FEATURES

- Ruggedized version of NI (Ettus Research brand) B210 Series Software Defined Radio
- Conduction-cooled construction optionally designed to meet MIL 810 for shock/vibration and MIL 461 for EMI
- IP67 weatherproof sealed unit (except air cooled version)
- Other similar 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 RB210 is a ruggedized version of National Instruments (Ettus Research brand) B210 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.

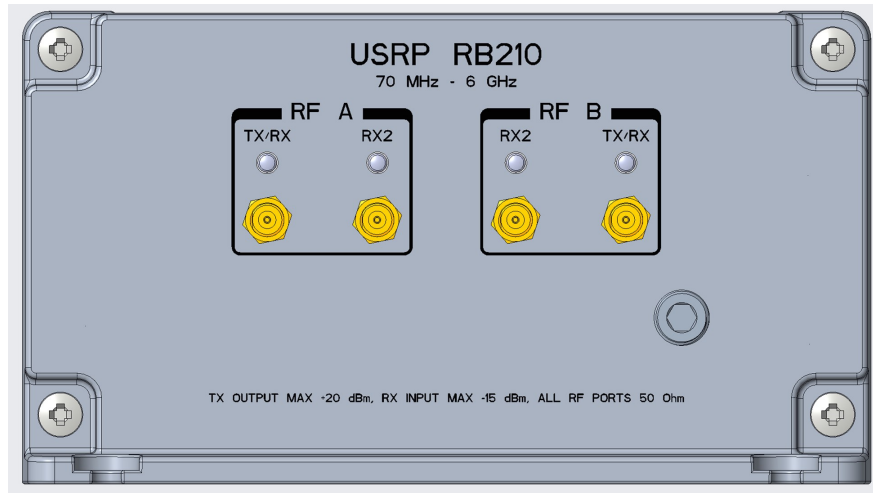
The RB210 series can be used in various types of airborne, shipboard, soldier mount, ground vehicle, or outdoor designs. Example applications include SIG-INT, passive RADAR, Drone Deterrence/Spoofing and prototyping systems for advanced wireless (WiFi/Cell/MIMO).

**Contact Pixus for ruggedization inquiries for other SDRs from NI.** Visit [www.ettusresearch.com](http://www.ettusresearch.com) for SDR specifications.

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## I/O Configurations & Power

Pixus offers a standard I/O configuration for the IP67 RB210 (see below) and other SDRs. The modular front and rear faceplates are also customizable. Consult Pixus to discuss your specific requirement. The RB210 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.



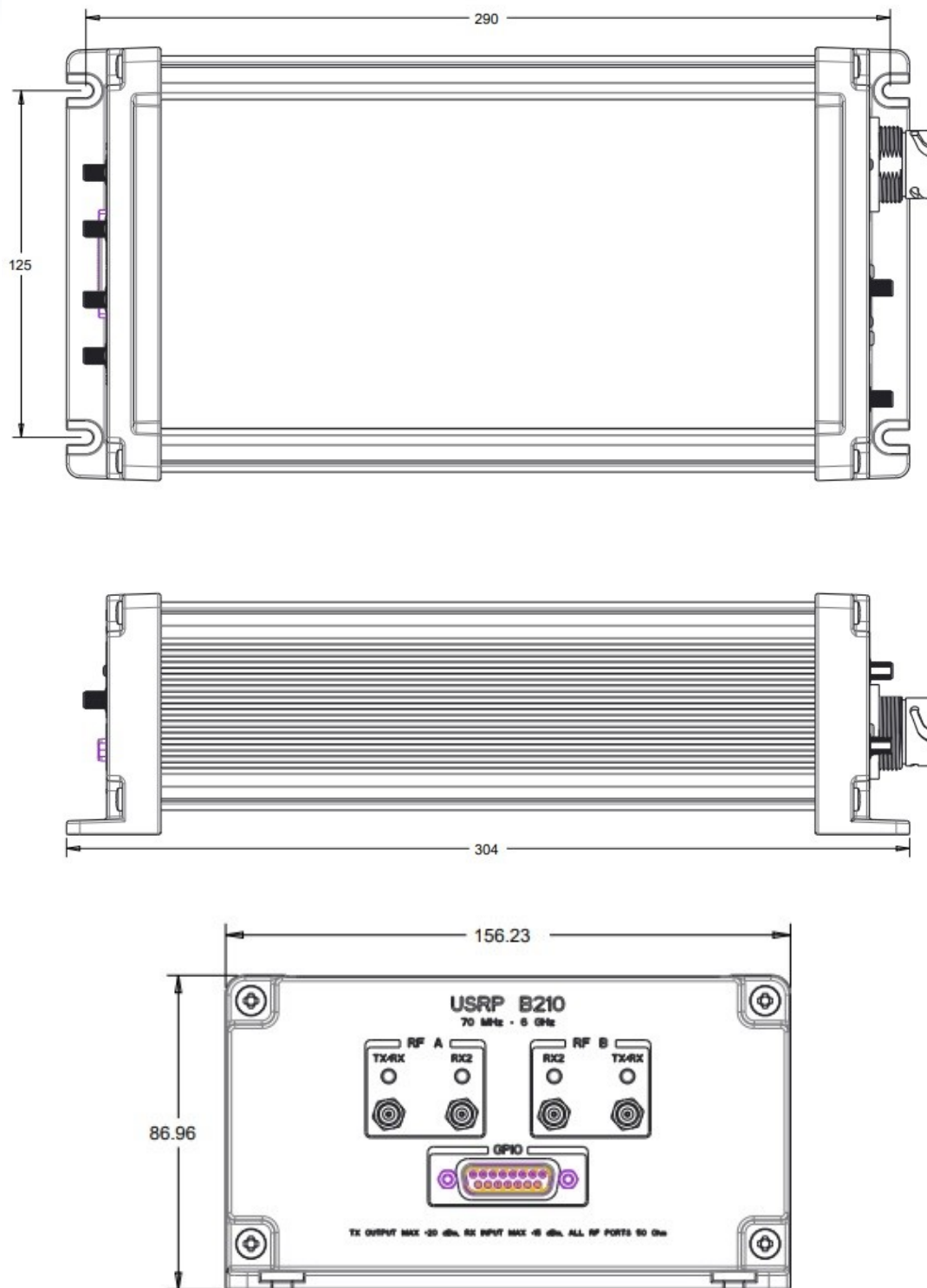
**Front I/O**



**Rear I/O**

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## Drawings—IP67 Version



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

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## Air Cooled Version

The air cooled version is designed for Transport grade ruggedization. They may be installed in shock isolated transit cases or shock isolated equipment racks hosted in mobile equipment shelters. During operation, the racks should be climate controlled. When transported, the SDRs are typically installed in the transit cases or equipment racks and transported via military aircraft, over improved roads, or via ship. While in transit, the units do not typically need to be in climate-controlled spaces, but the transit cases or shelters should be closed and latched/locked. The air cooled version is designed to meet the specifications below:

<b>Operational Environmental limits</b>		
Operating Altitude	At least 7500 ft	
Operating low temp	-20C	
Operating high temp	+70C	
Operating humidity range	20 % - 90%	
Shipboard Vibration	Yes	Vibration as specified in MIL-STD-167-1, Type 1, over a ship blade rate induced frequency range up to 33 Hz.
Vertical Lift Survive	Yes	2.0 g acceleration vertically with a simultaneous acceleration of 0.2 g in any perpendicular direction when lifted from the top or bottom. MIL-HDBK-810.
Operating pitch or roll	+/- 45 degrees	
<b>Transportation Environmental limits</b>		
Low temp	-40C	
High temp	+80C	Direct solar radiation of 1120 W/m <sup>2</sup> , for a period of 3 hours, per MIL-STD-810
Survive (transport) level altitude	At least 13,000 ft	
Road Transport Vibration	Yes	1.04 Grms (Vertical), 0.20 Grms (Transverse) and 0.74 Grms (Longitudinal) vibration levels in accordance with transportation via truck over US highways per MIL-STD-810G, Method 514.7, Procedure I, Category 4.
Air Transport Vibration	Yes	4.02 Grms of vibration in accordance with general exposure of jet aircraft cargo per MIL-STD-810G, Method 514.7, Procedure I, Category 7.
Road Shock	Yes	7.6G (peak), 11ms shock event in accordance with on road transportation per MIL-STD-810G, Method 516.7, Procedure II.
Transit Drop Survive	Yes	6 inches, per MIL-HDBK-810, Procedure IV

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## ORDERING OPTIONS

## RB210-ABC-DE-XX

### A = Type

- 0 = Standard RB210 type
- 1 = Other

### B = I/O Configuration

- 0 = Standard I/O with GPIO connector included
- 1 = Other
- 2 = Standard version as shown on page 2

### C = Ruggedization Level

- 0 = IP67, Rugged (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 mounting
- 1 = Other

### 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/>

