The USRP B200 and B210 hardware covers RF frequencies from 70 MHz to 6 GHz, has a Spartan6 FPGA, and USB 3.0 connectivity. This platform enables experimentation with a wide range of signals including FM and TV broadcast, cellular, Wi-Fi, and more. The USRP B200 features one receive and one transmit channel in a bus-powered design. The USRP B210 extends the capabilities of the B200 by offering a total of two receive and two transmit channels, incorporates a larger FPGA, GPIO, and includes an external power supply. Both use an Analog Devices RFIC to deliver a cost-effective RF experimentation platform, and can stream up to 56 MHz of instantaneous bandwidth over a high-bandwidth USB 3.0 bus on select USB 3.0 chipsets (with backward compatibility to USB 2.0). Because the B200 and B210 are enabled with our USRP Hardware Driver™ (UHD), users can develop their applications and seamlessly port their designs to high-performance or embedded USRPs such as the USRP X310 or USRP E310. UHD is an open-source, cross-platform driver that can run on Windows, Linux, and MacOS. It provides a common API, which is used by several software frameworks, such as GNU Radio. With this software support, users can collaborate with a vibrant community of enthusiasts, students, and professionals that have adopted USRP products for their development. As a member of this community, users can find assistance for application development, share knowledge to further SDR technology, and contribute their own innovations.

**FEATURES**
- RF coverage from 70 MHz – 6 GHz
- GNU Radio, C++ and Python APIs
- USB 3.0 SuperSpeed interface
- Standard-B USB 3.0 connector
- Flexible rate 12 bit ADC/DAC
- Grounded mounting holes

**USRP B200**
- 1 TX & 1 RX, Half or Full Duplex
- Xilinx Spartan 6 XC6SLX75 FPGA
- Up to 56 MHz of instantaneous bandwidth
- USB Bus powered

**USRP B210**
- 2 TX & 2 RX, Half or Full Duplex
- Fully-coherent 2x2 MIMO capability
- Xilinx Spartan 6 XC6SLX150 FPGA
- Up to 56 MHz of instantaneous bandwidth in 1x1
- Up to 30.72 MHz of instantaneous bandwidth in 2x2
- Includes DC power supply
- GPIO capability
### Spec | Typ. | Unit
--- | --- | ---
**Power**
DC Input | 6 | V

**Conversion Performance and Clocks**
ADC Sample Rate (max) | 61.44 | MS/s
ADC Resolution | 12 | bits
ADC Wideband SFDR | 78 | dBc
DAC Sample Rate (max) | 61.44 | MS/s
DAC Resolution | 12 | bits
Host Sample Rate (16b)** | 61.44 | MS/s
Frequency Accuracy | ±2.0 | ppm
W/ GPS Unlocked TCXO Reference | ±75 | ppb
W/ GPS Locked TCXO Reference | < 1 | ppb

### Spec | Typ. | Unit
--- | --- | ---
**RF Performance (single channel)**
SSB/LO Suppression | -35/50 | dBc
3.5 GHz | 1.0 | deg RMS
6 GHz | 1.5 | deg RMS
Power Output | >10 | dBm
IIP3 (@ typ NF) | -20 | dBm
Receive Noise Figure | <8 | dB

**Physical**
Dimensions | 9.7x15.5x1.5 | cm
Weight | 350 | g

*All specifications are subject to change without notice.
** See benchmark results for sample rates in various configurations.

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### About Ettus Research
Ettus Research is an innovative provider of software defined radio hardware, including the original Universal Software Radio Peripheral (USRP) family of products. Ettus Research is a leader in the GNU Radio open-source community, and enables users worldwide to address a wide range of research, industry and defense applications. The company was founded in 2004 and is based in Santa Clara, California. As of 2010, Ettus Research is a wholly owned subsidiary of National Instruments.