



## USRP™ E310 Embedded Series

### FEATURES

#### RF Capabilities

- 2x2 MIMO transceiver
- Up to 56 MHz bandwidth
- Frequency coverage from 70 MHz - 6 GHz
- TX & RX front-end filter banks
- Flexible rate 12-bit ADC/DAC
- Synchronization input (PPS)

#### Processing

- Xilinx Zynq 7020
  - Dual ARM Cortex A9 – 667 MHz
  - Xilinx 7 Series FPGA
- 1 GB DDR3 RAM for ARM Cores
- 512 MB DDR3 RAM for FPGA Logic

#### Peripherals

- 10/100/1000 BASE-T Ethernet
- Stereo audio output & mono mic input
- Integrated GPS receiver
- Host USB Support

#### Form Factor

- 133 x 68 x 26.4 mm
- 375 grams



### Pocket Sized, Stand-alone SDR

#### Applications

- Portable/mobile SDR applications
- Field-deployable wireless nodes
- Advanced wireless prototyping
- Wireless testbeds
- Spectrum sensing

### USRP™ E310 Product Overview

The USRP E310 pocket sized, stand-alone software defined radio provides 2x2 MIMO support covering 70 MHz – 6 GHz and up to 56 MHz of instantaneous bandwidth. At roughly the footprint of a mobile phone, with a typical power consumption of 2-6 watts, the USRP E310 is ideal for mobile and embedded applications with limited size, weight, and power requirements. A lighter weight, partial-enclosure version is available for custom and volume deployments. Baseband processing is performed in the Zynq 7020 IC which combines a reconfigurable Xilinx 7 series FPGA and integrated dual-core ARM A9 processor running a Linux operating system. Common to all USRP devices, the open-source software architecture provides cross-platform support with the USRP Hardware Driver(UHD™). UHD allows for compatibility with a large selection of applications and frameworks, such as GNU Radio.

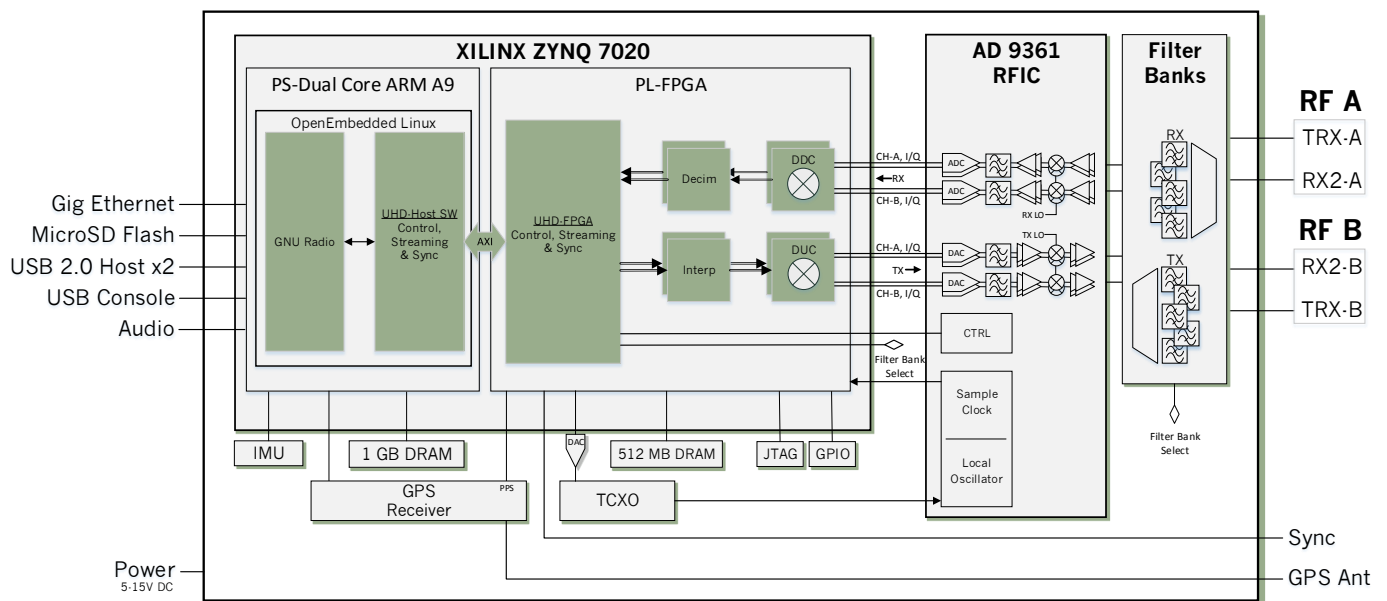
# USRP™ E310 Embedded Series

Spec	Typ.	Unit
<b>Power</b>		
DC Input	5-15	V
Power Consumption	2-6	W
<b>Conversion Performance and Clocks</b>		
ADC Sample Rate (max)	61.44	MS/s
ADC Resolution	12	bits
DAC Sample Rate (max)	61.44	MS/s
DAC Resolution	12	bits
Internal Reference Accuracy	2.0	ppm

Spec	Typ.	Unit
<b>**RF Performance</b>		
Frequency Coverage	70 – 6,000	MHz
Power Output	>10	dBm
IIP3 (@ typical NF)	-20	dBm
Typical Noise Figure	<8	dB
<b>Physical</b>		
Dimensions	133 x 68 x 26.4	mm
Weight - full enclosure	375	grams
Weight - partial enclosure	225	grams

\*All specifications are subject to change without notice.

\*\*Expanded RF Performance specifications are available on the product webpage

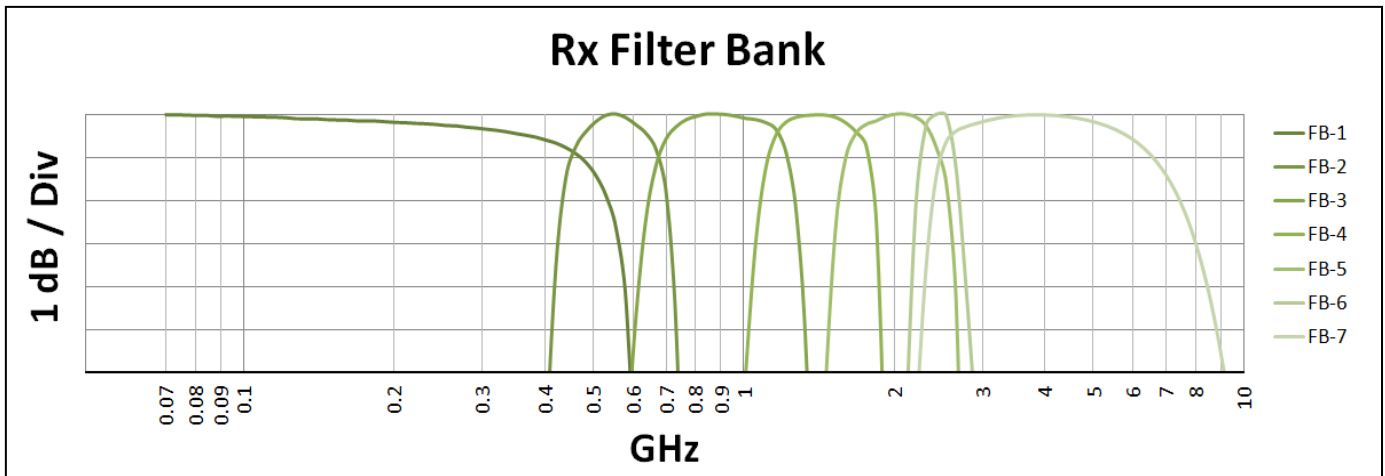


USRP E310 System Diagram

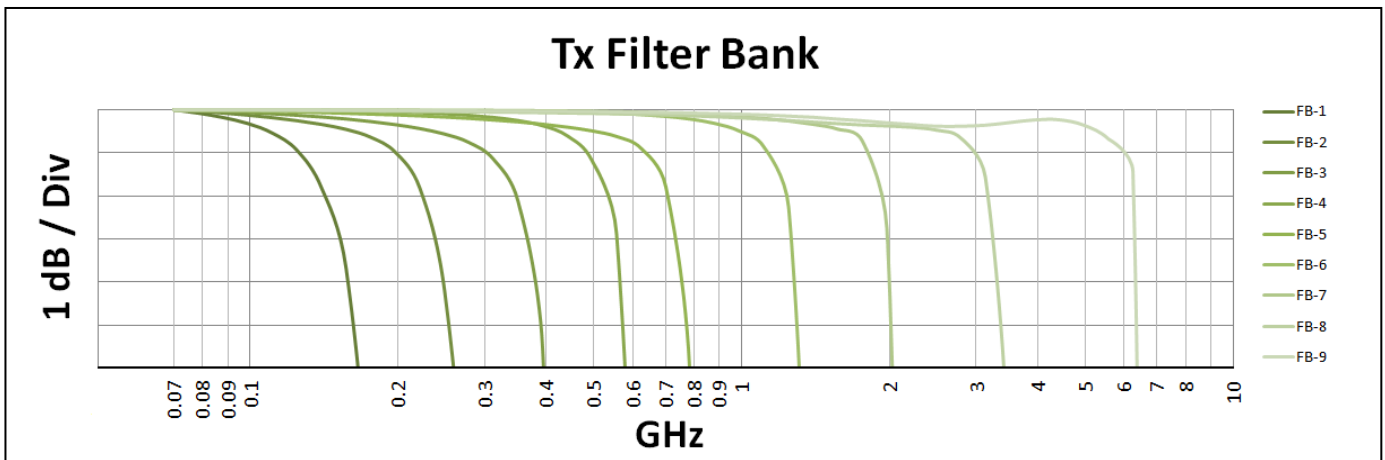
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### FILTER BANKS

The USRP E310 contains both Rx and Tx filter banks. Filters are dynamically chosen based on user frequency selection. The Rx filters reduce interference from out-of-band signals, while the Tx filters suppress harmonics.



\*Normalized values based on component characteristics.



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### About Ettus Research

Ettus Research™, a National Instruments (NI) company since 2010, is the world's leading supplier of software defined radio platforms, including the Universal Software Radio Peripheral (USRP™) family of products. Focusing on affordability, expansive capabilities, and empowering the open source community, USRP products are used by thousands of engineers worldwide and remain the top choice in software defined radio hardware for algorithm development, exploration, and prototyping.

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