



Features:

- (4) 64Msps 12 bit Analog-to-Digital converters
- (4) 128Msps 14 bit Digital-to-Analog converters
- (2) Digital Downconverters with programmable decimation
- (2) Digital Upconverters with programmable interpolation
- 0-20dB transmit, receive gain control
- High Speed USB 2.0 interface (480Mbps)
- Modular architecture supports wide variety of RF daughterboards
- Auxillary user-accessible analog and digital I/O support entire software radio systems
- Close coupling with the GnuRadio software radio framework forms a flexible powerful platform

Description

The USRP enables scientists and researchers to rapidly design and implement powerful, flexible software radio systems. The USRP can simultaneously transmit and receive two separate complex (or four real) RF signals in real time. The two onboard Digital Downconverters (DDCs) downconvert, decimate and filter incoming signals in hardware, saving the host system CPU for higher level processing. The DDCs combined with the 64MHz ADC sample rate also greatly simplify analog filtering requirements.

The USRP transmit side offers similar

functionality, two Digital Upconverters (DUCs) interpolate outgoing baseband signals to 128Msps before upconverting them to the selected output frequency.

Signals passing through the USRP can be processed by up to four RF daughterboard modules (two transmit and two receive). The modules currently available can receive signals from less than 1MHz to more than 2.4GHz.

Transmit modules from 400MHz to 2.7GHz will also be available. The daughterboard interface is well documented, enabling users to develop their own application-specific daughterboards as well.

Basic Specifications

Input

Number of input channels: 4 (or 2 I-Q pairs)
 Sample rate: 64 Msps
 Resolution 12 bits
 Analog input level: 0.2 Vpp (Max gain)
 2 Vpp (Min gain)
 Input -3dB bandwidth: 250 MHz
 SNR: 64dB at 5MHz (-.5dBFS)
 SFDR: 85dB at 5MHz (-.5dBFS)

Output

Number of output channels: 4 (or 2 I-Q pairs)
 Sample rate: 128 Msps
 Resolution: 14 bits
 Output level: 2 mA - 20mA into 200 Ohm load
 SNR: 72dB
 SFDR: 76dB at 6MHz (20mA drive)

Auxillary I/O

Analog input channels: 2
 Input channel resolution: 10 bits
 Analog output channels: 3 + 1
 Output channel resolution: (3) 8bits + (1) 12 bits