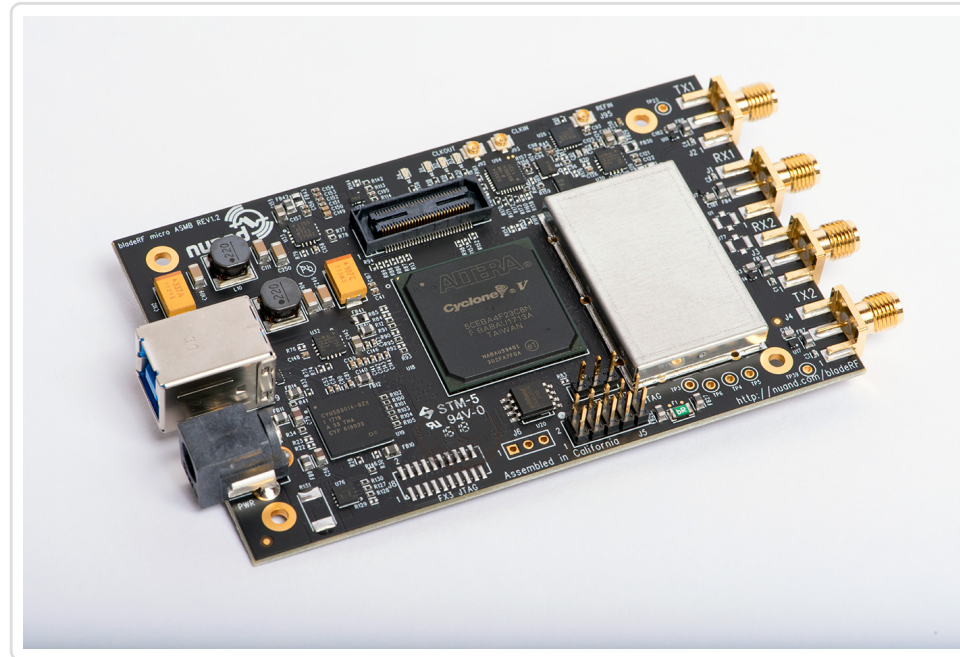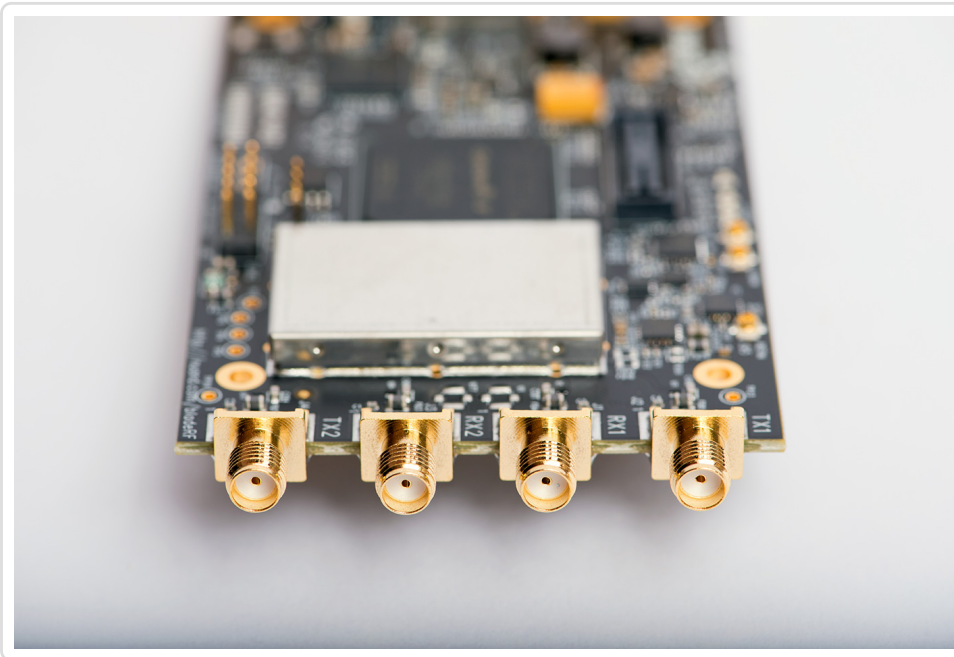# bladeRF 2.0 micro

The bladeRF 2.0 micro is the next-generation 2x2 MIMO, 47MHz to 6GHz frequency range, off-the-shelf USB 3.0 Software Defined Radio (SDR) that is easy and affordable for students and RF enthusiasts to explore wireless communications, yet provides a powerful waveform development platform expected by industry professionals.

Support is available for Linux, macOS, and Windows. The bladeRF libraries, utilities, firmware, and platform HDL are released under open source licenses, and schematics are available online. The FPGA and USB 3.0 peripheral controller are programmable using vendor-supplied tools and SDKs that are available online, free of charge.

FEATURES

> **RF PERFORMANCE**

> 47 MHz to 6 GHz frequency range
> 2x2 MIMO, 61.44 MHz sampling rate
> 56 MHz filtered bandwidth (IBW)
> Automatic gain control (AGC)
> Automatic IQ and DC offset correction

> **USB 3.0 SUPERSPEED SUPPORT**

> 200 MHz ARM926EJ-S processor
> Fully bus-powered over USB 3.0
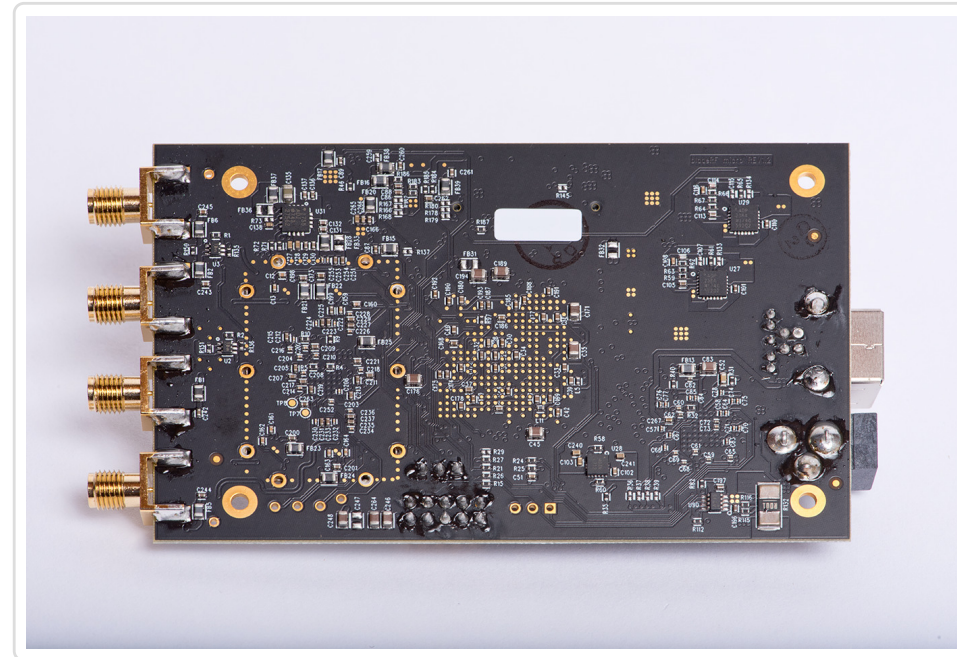> External power 5V DC barrel with automatic switchover

> **ALTERA CYCLONE V FPGA**

> 49 kLE and 301 kLE variants available for custom signal processing and hardware accelerators

> **FACTORY-CALIBRATED VCTCXO**

> Taming supported via 12-bit DAC or ADF4002 PLL
> Factory calibration of 38.4 MHz clock

SOFTWARE SUPPORT & APPLICATIONS

The bladeRF 2.0 micro features support for: GNU Radio via gr-osmosdr, Pothos via SoapySDR, SDRange, SDR Console, SDR # via sdrsharp-bladeRF, MathWorks MATLAB® & Simulink® via libbladeRF bindings.

The specification table scrolls to the right.

RF Specifications	Min	Typ	Max
ADC/DAC Sample Rate	0.521		61.44
ADC/DAC Resolution		12	
RF Tuning Range (RX)	70		6000
RF Tuning Range (TX)	47		6000
RF Bandwidth Filter	<0.2		56

RF Specifications	Min	Typ	Max
CW Output Power		+8	

FPGA Specifications	Min	Typ	Max
Logic Elements	49 (xA4)		301 (xA9)
Memory	3,383 (xA4)		13,917 (xA9)
Variable-precision DSP blocks	66		342
Embedded 18x18 Multipliers	132		684

Physical Dimensions	Min	Typ	Max
Dimensions		6.3 x 10.2 x 1.8	
		2.5 x 4.0 x 0.70	
Weight		90 (0.2)	
Operating Temperature	0		70

PRODUCTS