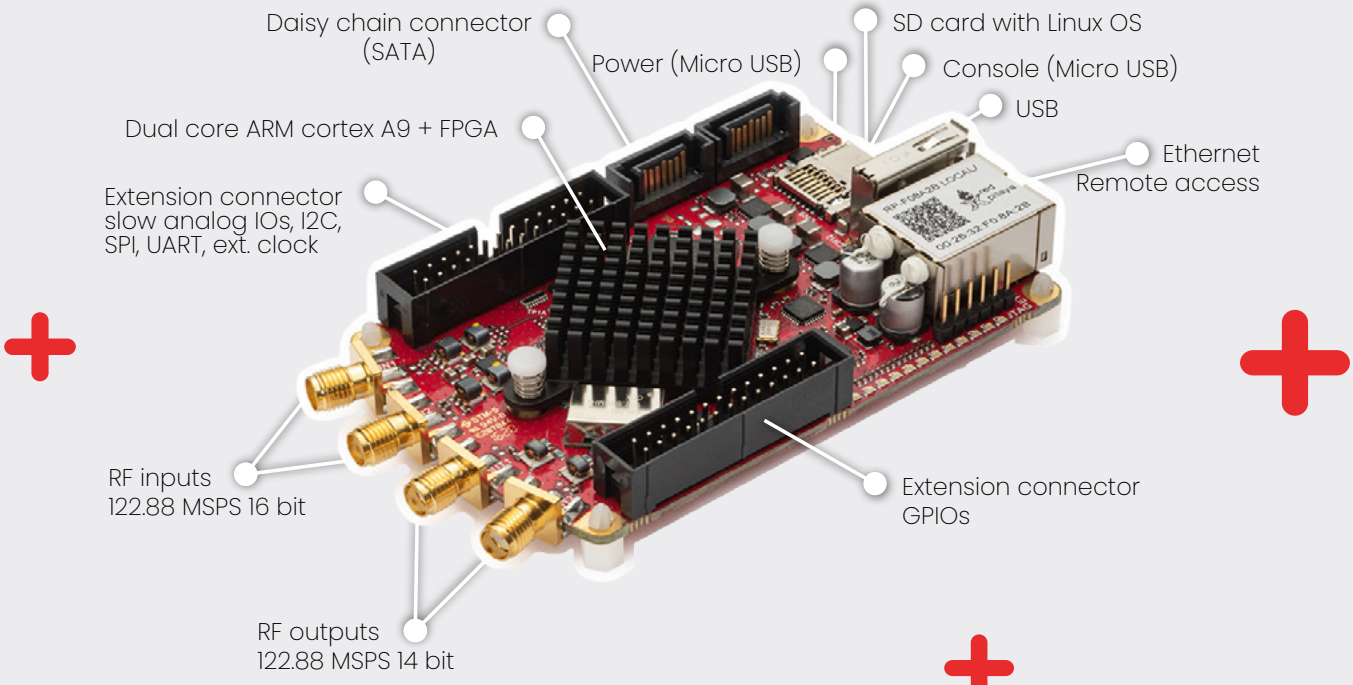
SDR^{lab} 122-16



redpitaya

SDRlab 122-16 was developed specifically for software-defined radio and more demanding RF applications.

It comes with two 16-bit 50-ohm inputs and 14-bit 50-ohm outputs, Xilinx Zynq 7020 FPGA for real-time processing capabilities plus an ultra-low phase noise 122.88MHz clock which makes it more hardware-compatible with HPSDR compliant applications. RF inputs are optimized for minimal distortion, noise and crosstalk which significantly improves reception and broadens the choice of antenna.

Key features

- Credit-card sized RF signal acquisition and generation platform
- Ethernet connectivity
- Xilinx SoC (CPU & FPGA)
- Two fast analog inputs and two outputs Possibility of integration into own system/ product Open-source software code
- Works with Linux or Windows PC
- Free online apps (oscilloscope & signal generator, spectrum, logic analyzer, SDR)
- Can be controlled remotely using LabVIEW, MATLAB, Python, or Scilab
- Can be programmed to meet custom needs Supported by an app marketplace with several free apps available

Technical Specifications

BASIC	
Processor	DUAL CORE ARM CORTEX A9
FPGA	FPGA Xilinx Zynq 7020 SOC
RAM	512 MB (4 Gb)
System memory	Micro SD up to 32 GB
Console connection	Micro USB
Power connector	Micro USB
Power consumption	5 V, 2 A max
CONNECTIVITY	
Ethernet	1 Gbit
USB	USB 2.0
WIFI	Requires WIFI dongle
Synchronisation	Daisy chain connector (up to 500 Mbps)
RF INPUTS	
RF input channels	2
Sample rate	122.88 MS/s
ADC resolution	16 bit
Input impedance	50 Ohm
Full scale voltage range	0.5 Vpp/-2 dBm
Input coupling	AC
Absolute max. input voltage range	DC max 50 V (AC-coupled) 1 Vpp for RF
Input ESD protection	Yes
Overload protection	DC voltage protection
Bandwidth	300 kHz - 550 MHz
RF OUTPUTS	
RF output channels	2
Sample rate	122.88 MS/s
DAC resolution	16 bit
Load impedance	50 Ohm
Voltage range	1 Vpp/ +4 dBm
Short circuit protection	N/A, RF transformer & AC-coupled
Connector type	SMA
Output slew rate	N/A
Bandwidth	300 kHz - 60 MHz
EXTENSION CONNECTOR	
Digital IOs	16
Analog inputs	4
Analog inputs voltage range	0-3,5 V
Sample rate	100 kS/s
Resolution	12 bit
Analog outputs	4
Analog outputs voltage range	0-1,8 V
Communication interfaces	I2C, SPI, UART
Available voltages	+5 V, +3,3 V, -4 V
External ADC clock	Yes
SYNCHRONIZATION	
Trigger input	Through extension connector
Daisy chain connection	Over SATA connection (up to 500 Mbps)
Ref. clock input	N/A

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