



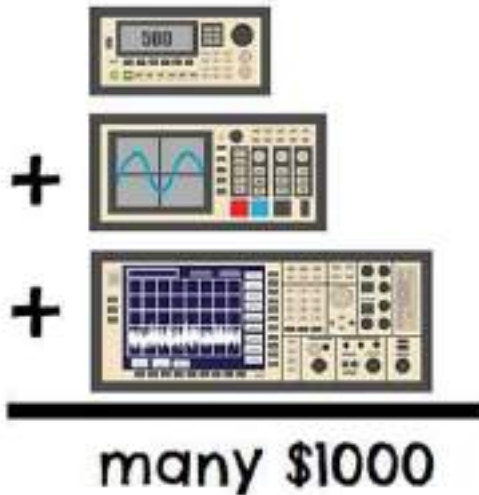
Red Pitaya

Borut Baričevič, Rok Hrovatin
Libera Workshop 2014

How it all began...



Red Pitaya is an **open source** measurement and control tool replacing many expensive laboratory instruments at a surprising price tag.



vs.



\$359 on

**KICK
STARTER**

Red Pitaya benefits

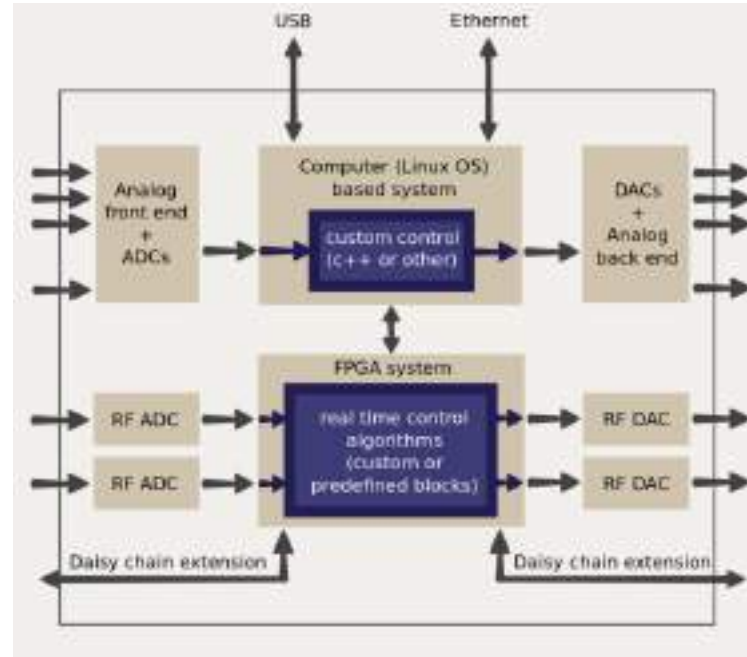


Red Pitaya, a revolutionary open source measurement instrument that brings particle accelerator technologies to everyone.

- compact
- open source
- network attached
- reconfigurable
- easy to use
- Internet browser applications



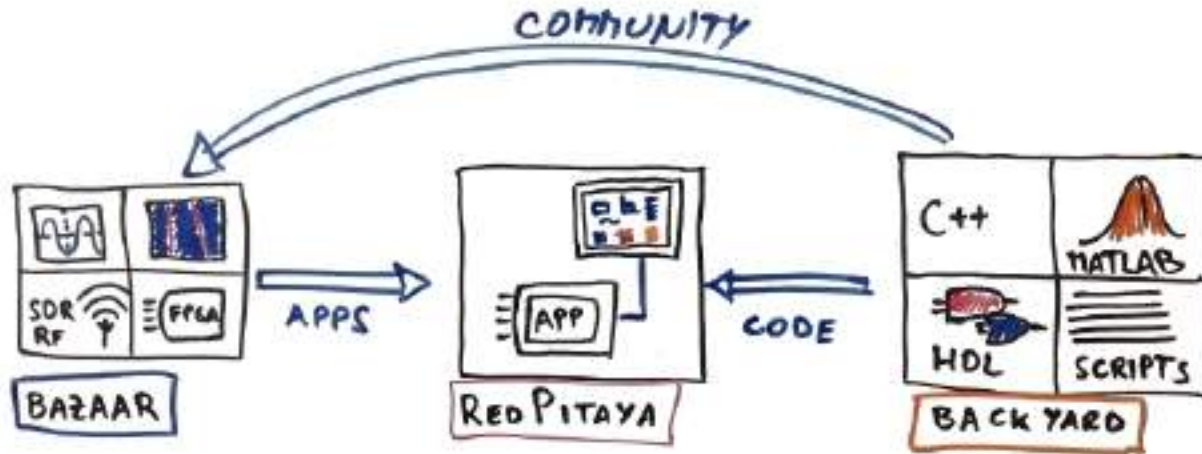
The block diagram



The hardware platform



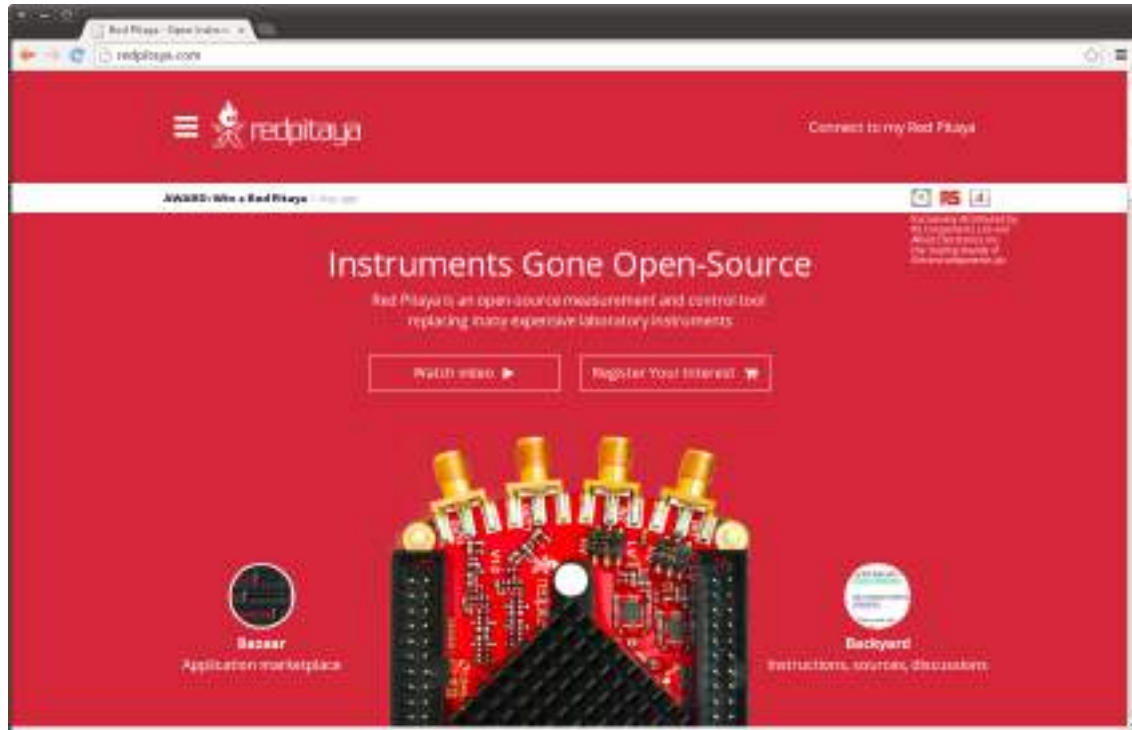
The ecosystem



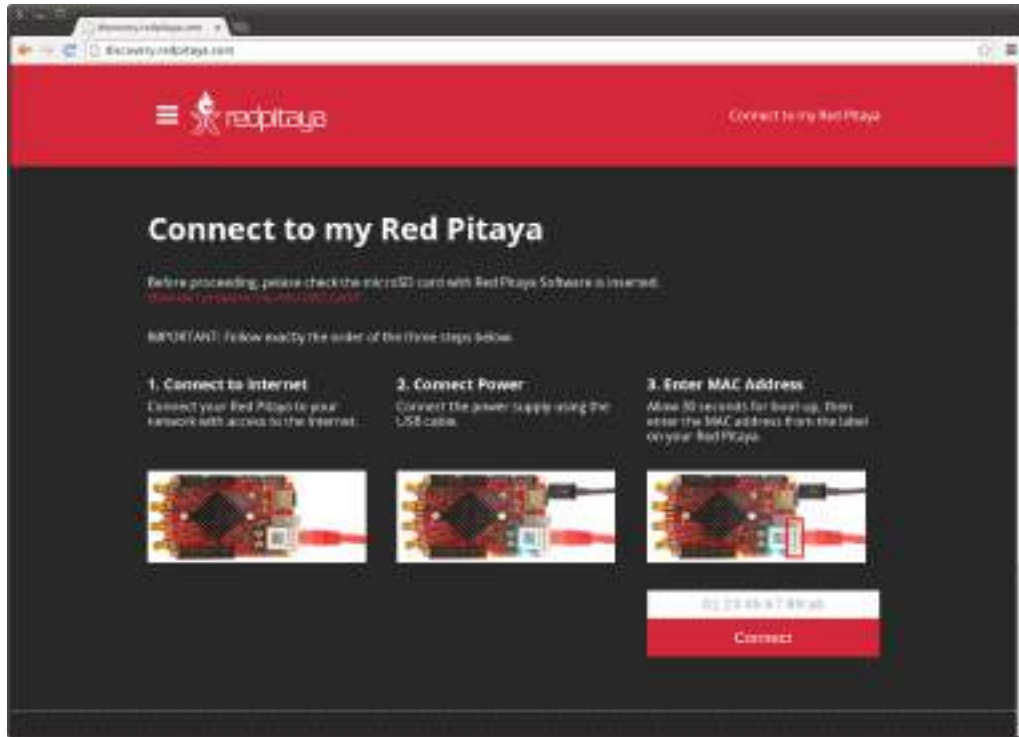
Bazaar: An application marketplace where open-source applications are available within a single click for immediate experience and use.

Backyard: A place where people learn about the use, discuss the ideas and further develop applications.

Ease of use



Ease of use



Ease of use



Connect to my Red Pitaya

Before proceeding, please check the microSD card with Red Pitaya Software is inserted.
[How to install the microSD card](#)

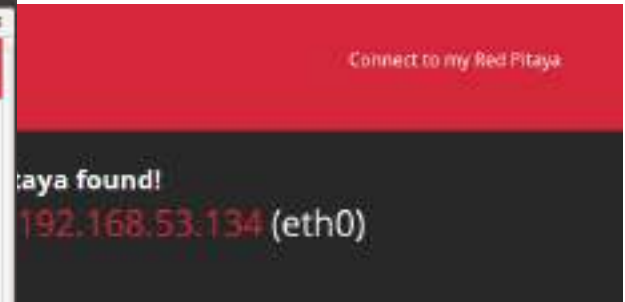
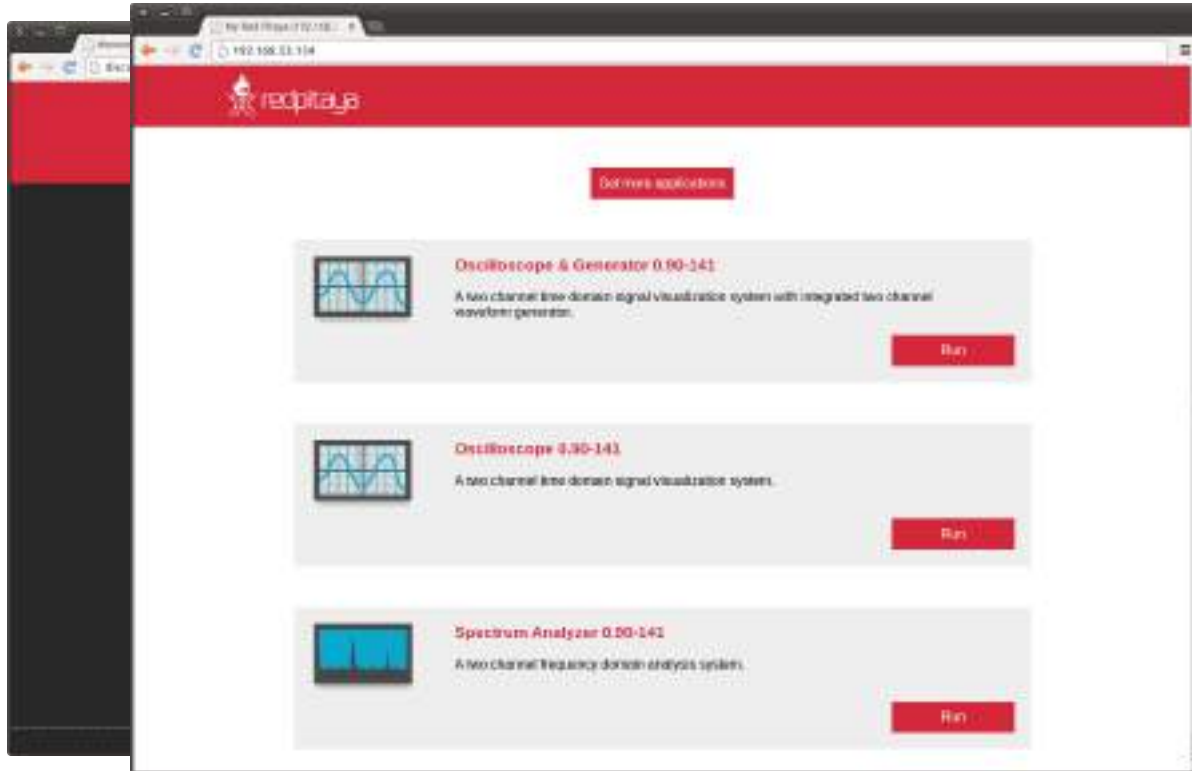
IMPORTANT! Follow exactly the order of the three steps below:

- 1. Connect to Internet**
Connect your Red Pitaya to your network with access to the Internet.
- 2. Connect Power**
Connect the power supply using the USB cable.
- 3. Enter MAC Address**
Allow 30 seconds for boot up, then enter the MAC address from the label on your Red Pitaya.

02:25:85:97:8F:40
Connect

Red Pitaya found!
My Red Pitaya on **192.168.53.134** (eth0)

Ease of use



The applications



Need for participation



Libera

particle accelerators

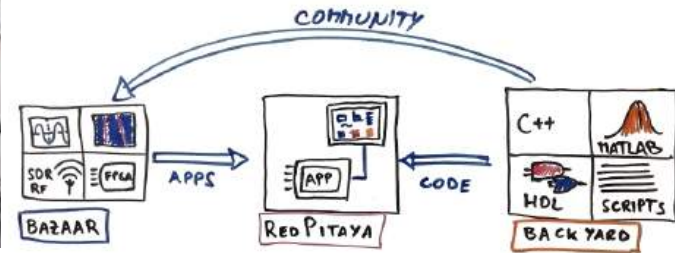
BPMs, synchronization, BBB, LLRF, ...



hobbyists, education, industry, labs

oscilloscope, spectrum analyser, controller, arbitrary signal generator, frequency response monitor, SDR, logic analyzer, impedance meter, 6 channel polygraph, full parametric equalizer, Hi-Fi effect for musical instruments, motor feedback and control, crash test dummy measurement tool, earthquake & tsunami analyser, control system analyser, ... **50/5**

Who contributed first?



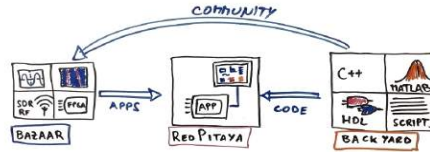
 Instrumentation Technologies



Who contributed next?



- ...
Mel on Sep 28, 2013
please upgrade to 7020... thanks.
- John Proffair on Sep 15, 2013
yeah I vote for 7020 as well.
- Wimish Telling on Sep 16, 2013
Also another vote for a 7020 (or 7015) upgrade
- Wimish Telling on Sep 16, 2013
Will this have a Xilinx WebPack or Vivado license? The microzed zedboards have a design edition voucher, which is considerable better than the webpack one.
- ...



IBIC 2013



Xmas edition testers



comments "from the side"

...

Kickstarter: Over 200 direct comments and suggestions

Who else?



Cooling the Red Pitaya

Jack Macdonald · 7 days ago · 1 vote · 1 answer

Red Pitaya availability

David · 11 days ago · 0 votes · 1 answer

Quiet Group

Tom Munnah · 12 days ago · 0 votes · 2 answers

Crosstalk between "analog" I/O channels

David · 20 days ago · 0 votes · 1 answer

Acquire function call from LabView example

Quinton · 21 days ago · 1 vote · 2 answers

Can we get a much larger sample buffer for the scope?

David · 1 month ago · 1 vote · 1 answer

Signal generation equation with GNU Octave

Sam · 1 month ago · 0 votes · 0 answers

Most important new apps

Andre Stadel · 1 month ago · 2 votes · 2 answers

User experiences with Red Pitaya

marvin · 1 month ago · 1 vote · 2 answers

My first Matlab loopback test-script worked!

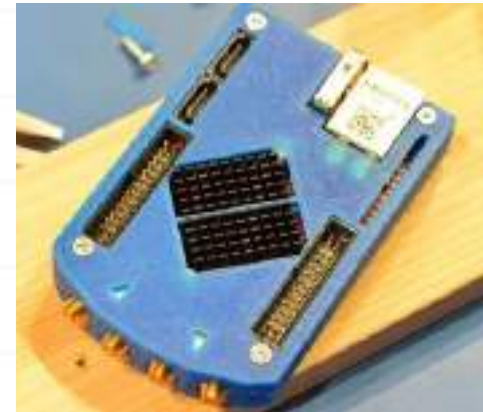
Kristi · 1 month ago · 3 votes · 2 answers

Very well done!

marvin · 1 month ago · 1 vote · 2 answers

Red Pitaya web page

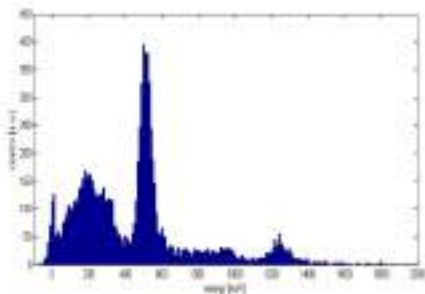
Red Pitaya · 1 month ago · 0 votes · 2 answers



comments



Sharing



Backyard

stackoverflow Questions Tags Tour Users

Sorted Questions

Red Pitaya is an open-source hardware device that designed to replace laboratory measurement instruments.

1 votes | 1 answers

RedPitaya case or housing options?

The RedPitaya is a great looking instrument, but I'm afraid that it will require expensive device by other voltage of ESD when I touch, with a few days, to it perfectly make an optional...

1 answer | 1 vote

Can't connect to wifi with recommended Edimax EW7811U [closed]

I can connect via ethernet, but have been trying to a stop with using the recommended Edimax EW7811U as mentioned here: <http://www.spinix.zendesk.com/entries/51410-edimax-ew7811u-wifi-connection>

0 answers | 0 votes

Red Pitaya NODs questions

I identified that most of you who are fans of Red Pitaya know what to do with it. Today I had a question from the UK as to what the hell can one do with this NODs like in the UK. I allowed a 40,000...

0 answers | 0 votes

Red-Pitaya Kernel: add additional Modules

Is it possible to add additional modules for some USB device to the default redPitaya kernel? Right now the kernel seems to be OK without trouble case in it. Especially focus on adding devices...

0 answers | 0 votes



Instructions

Wiki, Getting Started, Specifications, Users Manual



Discussions

Questions, Comments, Ideas GitHub, Source Code Repository



Sources

Ideas & Votes

How you submit and vote for the AWARD going on.

Questions & Answers

Comments & Praises

FAQ

and sharing



RedPitaya / RedPitaya

Red Pitaya Ecosystem and Applications

Commit	Message	Time
oemb authored 8 days ago	Lesson commit: hardware	8 days ago
Applications	Scope: 3 range limited from 28 ms to 20 s. FragPeriod displayed wit...	8 days ago
Branch	Merge branch 'master' of https://github.com/redpitaya/redpitaya	26 days ago
FFGA	Correct output with single rate usage	30 days ago
OS	OS: kernel brought up before uSD to avoid routing problems	3 days ago
Test	Added binary system to acquire	10 days ago
libs	Added number utility (Math/Output client function)	10 days ago
shared	Release 0.30 commit	a month ago
CHANGELOG	Release 0.30 commit	11 days ago
COPYING	Updated documentation regarding source-based rebuild (Buildroot). Ch...	11 days ago
INSTALL	Release 0.30 commit	11 days ago
Makefile	Added sequencing to fw_parsers/fw_parser_a test tools	11 days ago
README	Release 0.30 commit	11 days ago
TODO	Updated documentation regarding source-based rebuild (Buildroot). C...	11 days ago

Xilinx and Red Pitaya is Tootie Fruity

by Luke Miller

Published on 04-03-2014 10:00 AM

Zynq-based, open-source Red Pitaya instrumentation platform jumps from Kickstarter to mass market

by E. XLINK sleibso 02-19-2014 02:33 PM - edited 03-19-2014 02:35 PM

Zynq-based Red Pitaya Open Instrumentation Platform captured under glass at Embedded World

by E. XLINK sleibso 02-26-2014 05:55 PM - edited 02-27-2014 00:16 AM



Red Pitaya Bears Fruit and it Tastes Good

Posted by Andrew Back on Fri, Mar 21 2014 09:58:00

The “How?”



Answering the “How?”



redpitaya

Connect to my Red Pitaya

Connecting to Red Pitaya... 0 steps left

Instruments Gone Open-Source

Red Pitaya is an open-source measurement and control tool replacing many expensive laboratory instruments.

Watch video ▶

Register Your Interest ↕

Bazaar
Application marketplace

Backyard
Instructions, Discussions, Sources

Sponsored by: Alan Bakula by WS Components Ltd and Alkal Electronics Inc. Also trading through: BNC-Tools.com and BNC-Tools.com

Wanted (see blog)



THE RED PITAYA AWARD

Login to our Backyard's *Ideas & Votes* page and propose the best, the most interesting, and the coolest application that could be implemented on Red Pitaya. This enters you into our competition.

April 1, 2014

RESULT: 50 / 5

A piece of aged, yellowed paper with a circuit board and components at the bottom. The text "BEST RED PITAYA IDEAS WANTED" is printed in a bold, black, sans-serif font, framed by two horizontal lines.

**BEST RED PITAYA
IDEAS WANTED**

News



Communicated weekly, mostly through Blog & Stories (also the Award).

Use of Red Pitaya for broad spectrum of applications - need for various development levels.

As roots were initially based here, the complexity fits the accelerator community.



Thanks.