

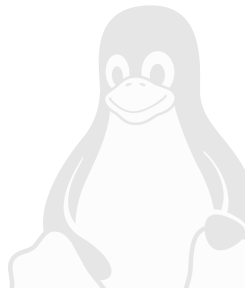
Embedded Systems

Importance of Free Hardware Platforms: A Review

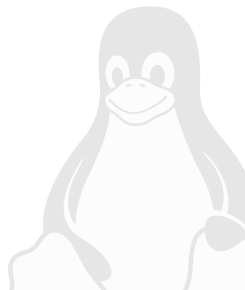
Amir Rezaei

`amirrezaeibalef@gmail.com`

Software Freedom Day
Sharif University of Technology
29th September 2016

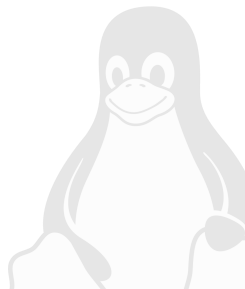


- Free Hardware Concept
- Introducing Open Source Hardware Programming Platforms
- An Overview of Available Free OS and Software Platforms
- Sample Project using Arduino and Mbed



Others can make it!

- Schematics
- PCB layout
- HDL source code
- Mechanical drawings

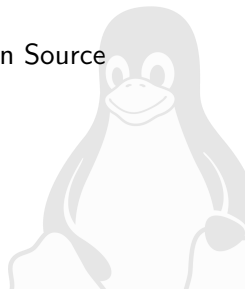


Open Source: Not Just for Software Anymore

Open Source Hardware

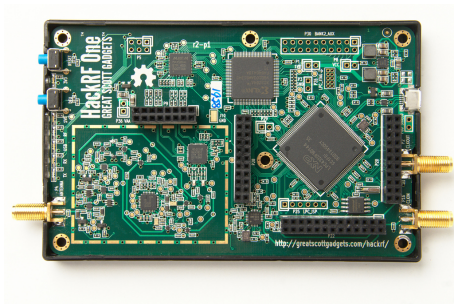
- Custom Design
- Research Costs
- Design Time
- Highly reliable

Open Source Hardware Works Better With Your Open Source Software



Introducing Open Source Hardware Programming Platforms

- HackRF!



- OpenBCI, an Open Source Brain Computer Interface
- Xoscillo, an Open Source Oscilloscope
- Open Source 3-D printers
-



Introducing Open Source Hardware Programming Platforms

- Arduino!

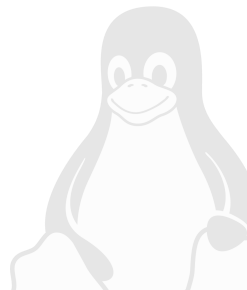
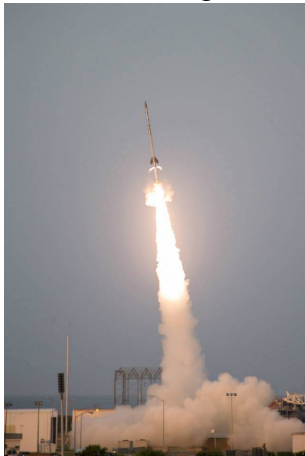


- CERN BPM (Beam Profile Monitoring) Using an Arduino Yun!

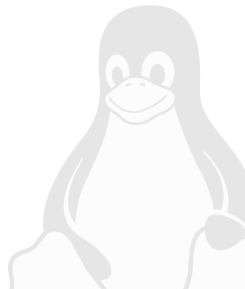


Introducing Open Source Hardware Programming Platforms

- NASA Black Brant IX Using an Arduino Mega!



- Mbed
- Arduino
- FreeRTOS
- RIOT
- ...



Sample Project using Arduino and Mbed!

Amir:

If at first you don't succeed, Try Arduino examples!

