

Opensource Hardware Arduino and Beyond

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Overview

- Definitions
- Very high end
- Serious power
- Good old Arduino
- An Arduino for all jobs

Open source hardware

- Formalising the definition <http://freedomdefined.org/OSHW>
- Popular before the license definition, CC for docs, GPL for code
- Physical hardware takes physical material to fabricate
- Needs new rules and a new approach!

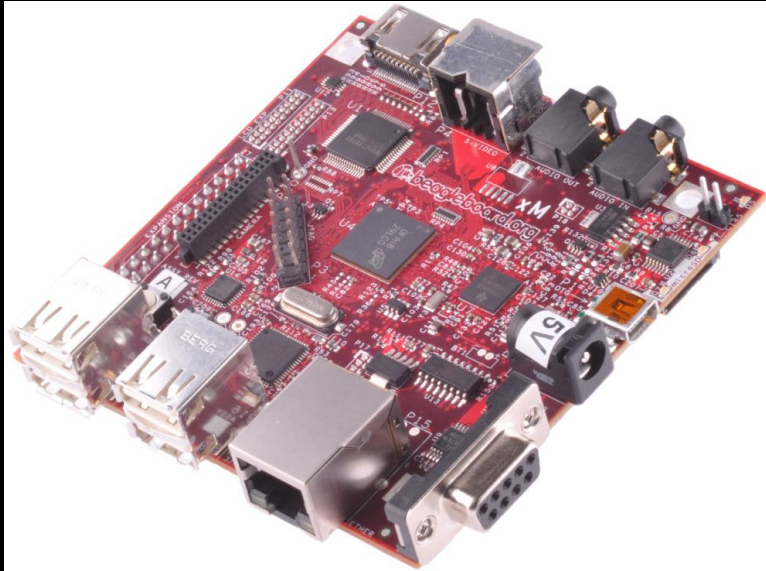
High end - Ettus Research USRP



- High performance software radio peripheral
- Embedded solution in the E100 unit
- Recently bought by National Instruments
- Software and support carried out publicly GIT and mailing lists
- <http://www.ettus.com>

Serious power

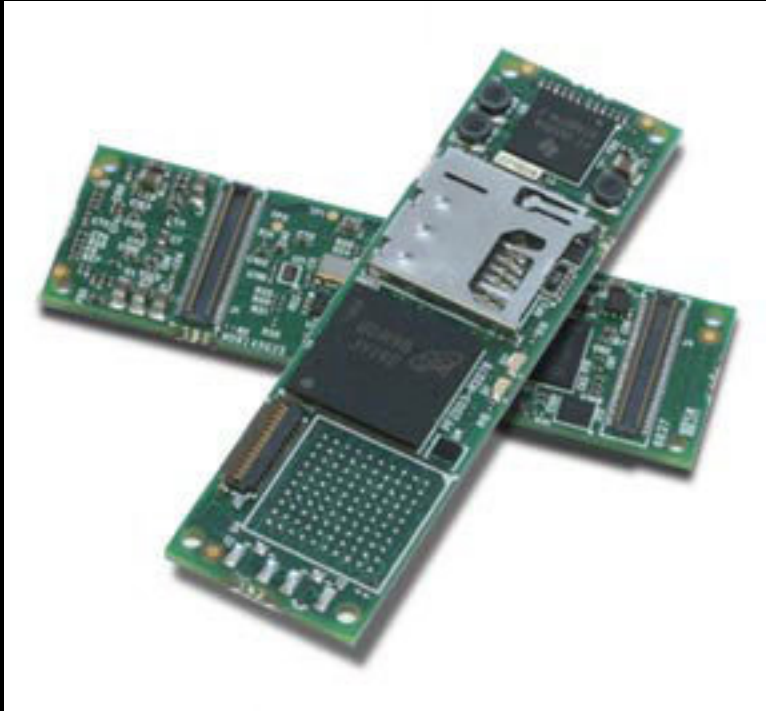
Beagleboard XM



- Powerful ARM based platform
- Can run a familiar full graphical Ubuntu desktop!
- Ethernet and USB host, HDMI output
- 1GHz CPU and 512MB of RAM with loads of media codecs
- <http://beagleboard.org>

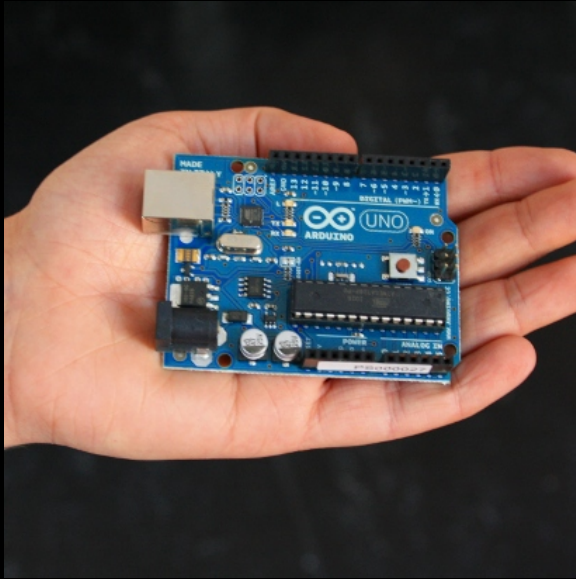
Serious power

Gumstix



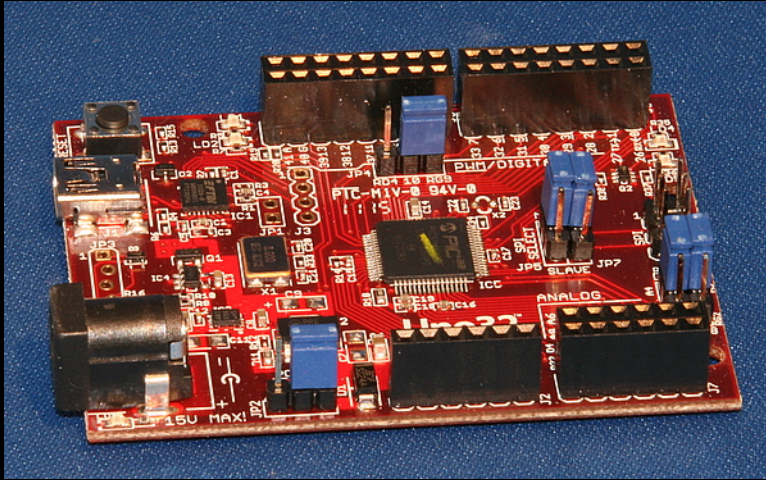
- Tiny footprint (hence the name)
- More professional target audience
- <http://www.gumstix.com>

Good old Arduino options



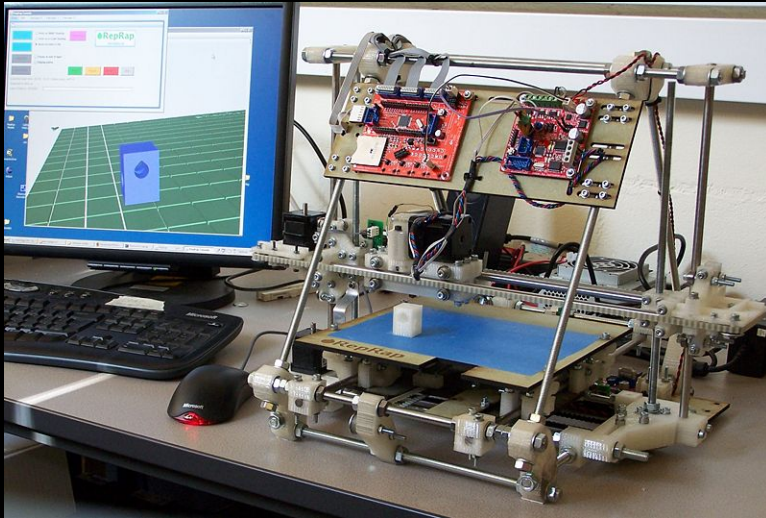
- Arduino Uno is the current version, based on the original
- Has an excellent abstraction layer
- becoming a standard for other specific versions
- Limited, but not just to flashing LEDs!
- <http://www.arduino.cc>

Arduino variants for the power hungry



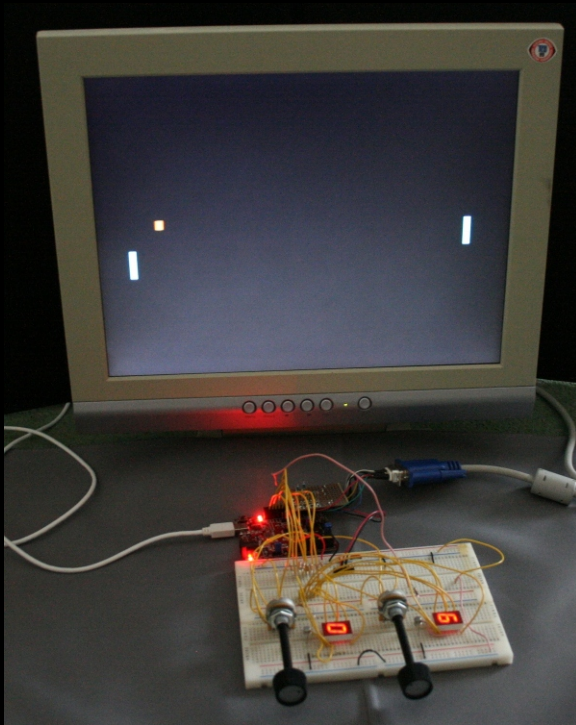
- Arduino Mega 2560 | <http://www.arduino.cc>
- Leaf labs Maple | <http://leaflabs.com/devices/maple>
- Chipkit Uno/Max | <http://chipkit.org>

Open source hardware projects



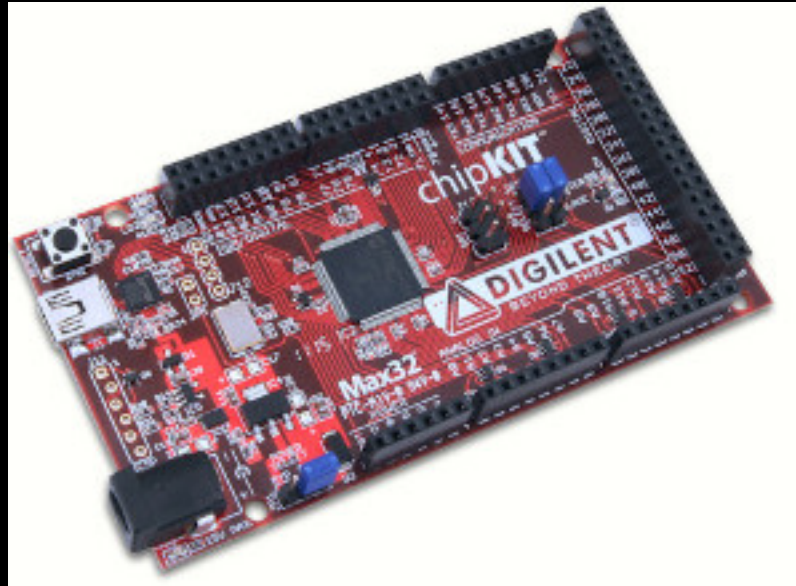
- Rep-*rap* 3D printer
- The Bus Pirate
- Openmoko

Pong demo



- Available to play in the exhibition
- Full schematic and code available
- BETA project, does glitch at times and ball physics is questionable!

Prize hardware!



Chipkit MAX32 sponsored by Farnell electronics.
<http://uk.farnell.com>

Getting This Presentation

This presentation is available for download:

<http://nathandumont.com/oggcamp11>

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