

Raspberry Pi & Co



Practice and theory

Raspberry Pi in a nutshell
History of RPi

RPi in a nutshell



Raspberry Pi is a desktop-computer

- Light-weight **credit-card**-sized
- USB 2.0, Ethernet, Audio Jack
- Powerful **graphic** capabilities and **HDMI**
- **GPIO** and support for low-level-protocols like i2c, spi, uart ...



History of RPi



Original **Idea** behind Raspberry Pi originates from **Cambridge** University Computer Laboratory

- Eben Upton
- Rob Mullins
- Jack Lang
- Alan Mycroft



2006



History of RPi



Original **inspiration** Raspberry Pi

General **observation** in **Computer** Science:

< 2000

Students in many cases
experienced hobbyist
programmers and/or hardware hackers

> 2000

Student **decline** in both **numbers** and **skillset**



UNIVERSITY OF
CAMBRIDGE

2006



History of RPi



Original **inspiration** Raspberry Pi

Interaction of kids with computer changed:

ICT curriculum-colonisation

Office, Web-technologies, 4GL, ...

Rise of PC-consoles

(replacing Amigas, BBC Micros, Commodore 64, ...)

Price of PC and devices to hack

Closed and arcane operating systems

Lock down hardware

...

(Note:
Smartphones, iPhones,
IPads aren't much of an improvement)

2006



History of RPi



Original **Concept** behind Raspberry Pi
Development of a **Platform** that

Like those old home computers, could **boot** into a
programming environment.

Was inspired from the **BBC Micro** project (1981)

Was based on **open** source soft- and hardware

Community-driven

2006



History of RPi



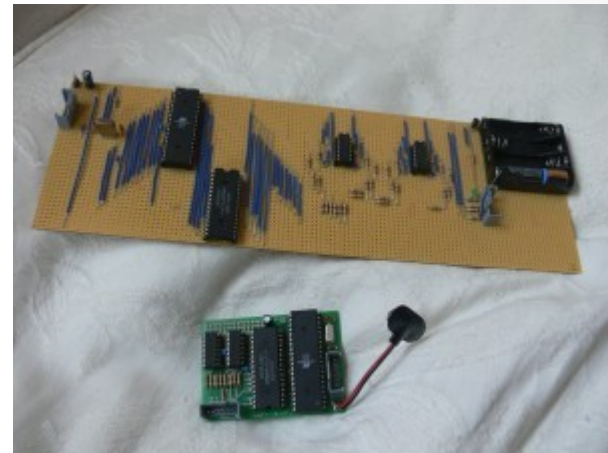
First (early) **proof of concepts**

Atmel ATmega644 microcontroller

Clocked at 22.1MHz

512K SRAM
(data and framebuffer storage)

320×240 component video signal



2006

https://www.youtube.com/watch?feature=player_embedded&v=ZHfRhqMo8ns

History of RPi



In **2008** the project accelerated

Mobile (r)evolution

Mobile processors became affordable

Graphical rich environments

Linux-destop evolved

Debian

Ubuntu

Fedora

... Android

Eben Upton (founding member)

New role as SOC-architect at Broadcom

(SOC = **S**ystem **o**n a **c**hip)

2008



History of RPi



Raspberry Pi Foundation

registered in 2009

Charitable organization

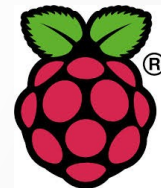
Promote study of computer science in schools

Put the fun back in to learning computing

Responsible for developing and governing Raspberry Pi

Name

- Tradition giving computers name fruit (Tangerine, Abricot, ...)
- Pi referring to Python



2009



History of RPi



Pre-launch

August **2011**, 50 alpha boards

(eq Model B)

Debian with LXDE-desktop running Quake



December 2011, 25 alpha boards

(eq Model A – lighter version)

2011



History of RPi



Officially launched on February 29 th **2012**

Manufacture deals element 14 and RS Electronics,

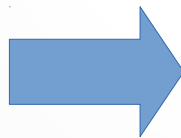
First production run was 10,000 boards

Both RS and Farnell's **servers** were **stalled** on the day of launch.

RS reported over 100,000 pre-orders in one day

Within a **year** it had sold over one **1000,000** units.

Current production is about **4,000** boards per day



2012

...

