

Linux Dev-Boards

Tagung Forth Gesellschaft e.V.

Maerz 2014

Linux Boards

- "embedded" Boards mit Linux
- Forth ideal fuer die Boards mit wenig Speicher/CPU-Leistung

Gnublin LAN



Gnublin LAN (1)

- ARM 9 180 MHz processor
- 32 MB SDRAM
- MicroSD cards (up to 32GB) Operating system / kernel / user data
- 1 x RJ45 network port (via ENC28J60)
- 1 x integrated USB console (USB to RS232 converter)
- 1 x relay on-board

Gnublin LAN (2)

- 1 x RTC (clock with battery)
- GNUBLIN Connector
- 1 x LED on GPIO controlled 3
- Various boot options (SD Card, DFU or RS232)
- External 7-12 V power supply via hollow socket (optional)
- USB OTG (host or device)

Gnublin LAN (3)

- Vorteile
 - gute Verarbeitung
 - umfangreiche Dokumentation (Deutsch)
 - deutsche "Community"
- Nachteil
 - wenig Speicher (fuer Forth kein Problem)
- Preis: 55 Euro

Cubie-board



Cubie-board (1)

- 1 GHz ARM Cortex A8 (AllWinnerTech SOC A10)
- 1GB of DDR3 RAM
- Mali400 OpenGL ES GPU
- a very powerful Video Encoding/Decoding VPU
- 4GB internal NAND flash, up to 64GB on SD slot, up to 2T on 2.5 SATA disk
- 1x 10/100 ethernet, support usb wifi

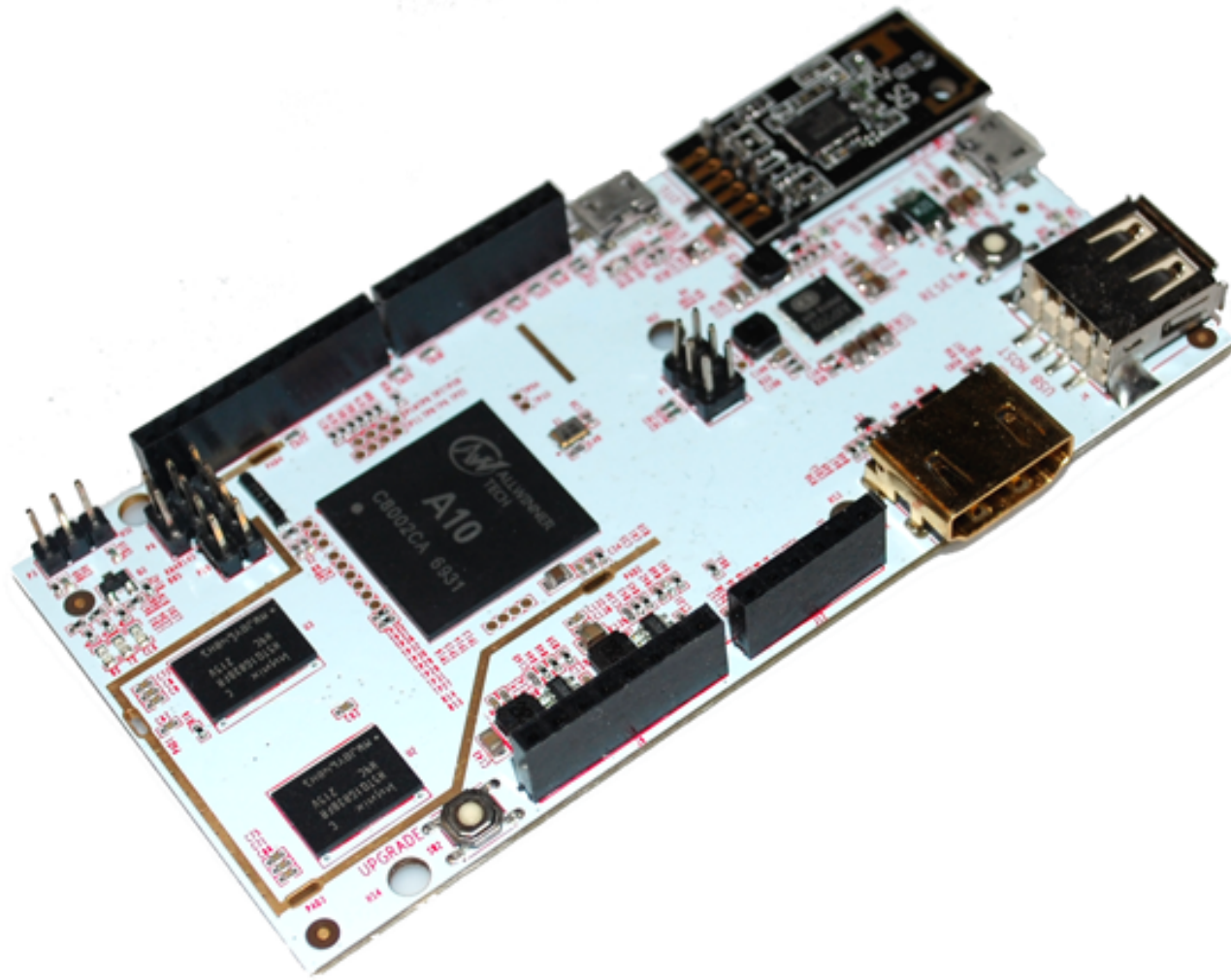
Cubie-board (2)

- 2x USB 2.0 HOST, 1x mini USB 2.0 OTG, 1x micro sd
- 1x HDMI 1080P display output
- 1x IR, 1x line in, 1x line out
- 96 extend pin interface, including I2C, SPI, RGB/LVDS, CSI/TS, FM-IN, ADC, CVBS, VGA, SPDIF-OUT, R-TP
- 5VDC input 2A or USB otg input

Cubie-board (3)

- Vorteile
 - Leistungsfaehig (viel Speicher, schnelle CPU)
 - SATA-Schnittstelle
- Preis: ca 50 US\$

PCduino



PCduino (1)

- 1GHz ARM Cortex A8
- OpenGL ES2.0, OpenVG 1.1 Mali 400 core
- 1GB DRAM
- 2GB Flash, microSD card (TF) slot for up to 32GB
- HDMI Video
- 10/100Mbps RJ45 and USB WiFi extension
- Power: 5V, 2000mA

PCduino (2)

- Betriebssysteme
 - Linux/Ubuntu 12.04
 - Android ICS 4.0

PCduino (3)

- Vorteile
 - Leistungsfaehig
 - Android Entwicklung (gForth)
- Preis: 59 Euro

Raspberry Pi



Raspberry Pi (1)

- ARM1176JZF-S (Broadcom BCM2835) 700 MHz
- Broadcom VideoCore IV, OpenGL ES 2.0, OpenVG 1080p30 H.264
- 512MB (Model B)
- 2 x USB
- Composite video, Composite RCA, HDMI
- 3.5 mm jack, HDMI Audio
- SD/SDHC card slot

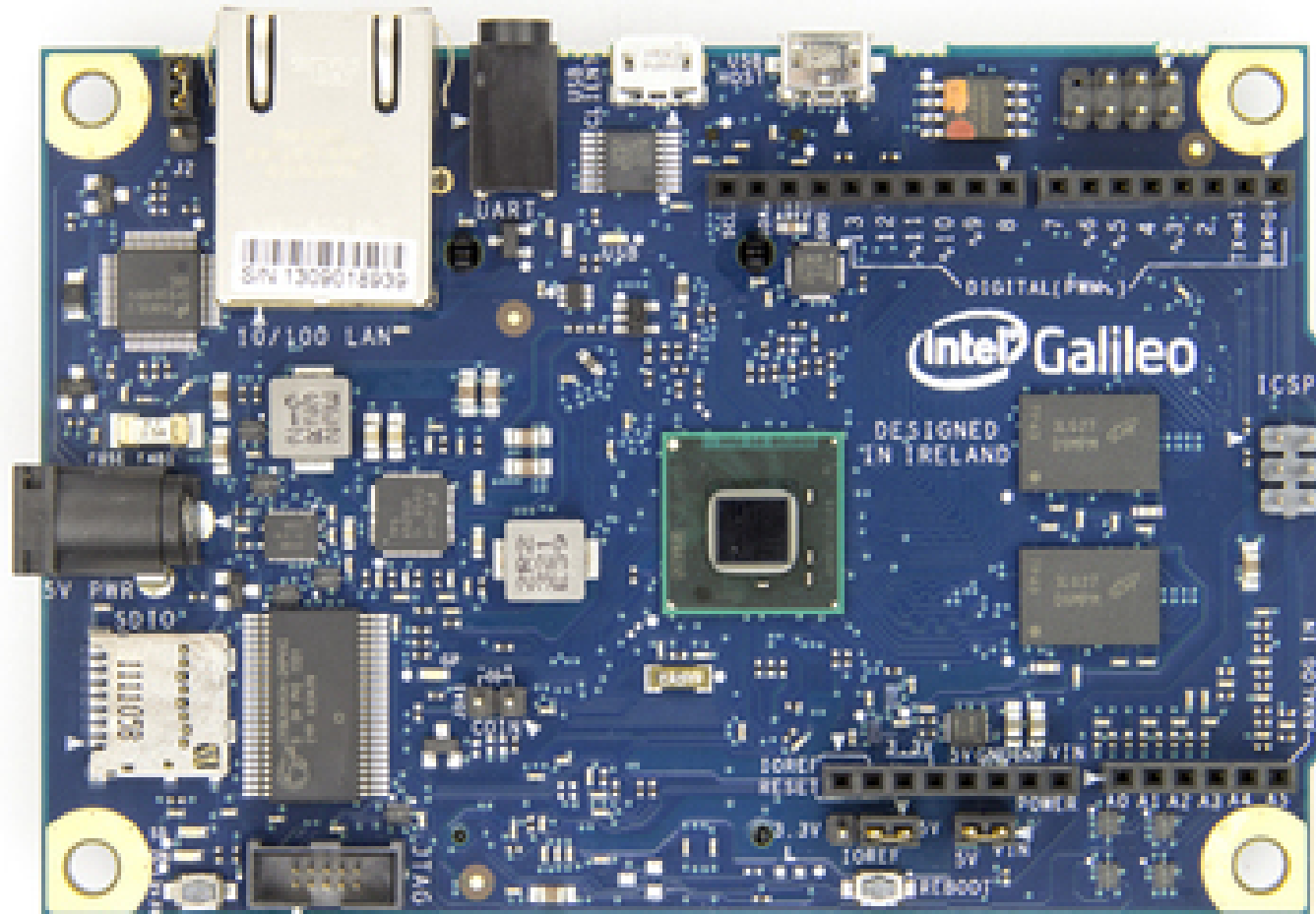
Raspberry Pi (2)

- 10/100 Ethernet RJ45
- Power: 5v, 700mA, (3.5 Watt)
- General Purpose Input/Output (GPIO) pins, SPI, I2C, I2S, UART

Raspberry Pi (3)

- Vorteile
 - grosse Community
 - preiswert
 - viele Betriebssysteme (Linux, RISC-OS, Android, FreeBSD, Plan9, Inferno ...)
- Preis: 39 Euro

Arduino Galileo



Arduino Galileo (1)

- 400MHz 32-bit Intel Pentium
- 16Kb L1-Cache
- 512 KBytes of on-die embedded SRAM
- 256 MByte DRAM
- ACPI compatible CPU sleep states
- integrated Real Time Clock (RTC)

Arduino Galileo (2)

- 10/100 Ethernet
- Full PCI Express* mini-card slot
- USB 2.0 Host connector
- USB Device connector
- 10-pin Standard JTAG header
- UART (RS-232)

Arduino Galileo (4)

- Vorteile
 - PC kompatibel
 - viele Betriebssysteme (Linux, xBSD, DOS ...)
 - viele Forth-Systeme
 - kein Cross-Compiling
 - Arduino Shield kompatibel (5V und 3.3V)

Arduino Galileo (5)

- Nachteile
 - Preis (60-80 Euro)
 - komplex
 - Stromverbrauch

