



Upstream Allwinner ARM SoC support

Presented by
Hans de Goede

Today's Topics

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- U-boot status
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- Kernel roadmap

Allwinner SoCs

Allwinner SoCs



	A10	A13	A20	A23	A31	A33	A80	A83
CPU	A8	A8	2x A7	2x A7	4x A7	4x A7	4x A7 + 4x A15	8x A7
GPU	Mali400	Mali400	Mali400	Mali400	PowerVR SGX544	Mali400	PowerVR G6230	PowerVR SGX544
SATA	Yes	No	Yes	No	No	No	No	No
Eth	100M	100M *	1G	No	1G	No	1G	No?
HDMI	Yes	Yes *	Yes	No	Yes	No	Yes	No?

*) Only on the A10s variant / package

U-boot status

U-boot status



	Feb 2014 u-boot-sunxi	Feb 2015 upstream u-boot
Upstream	No (fork)	Yes
A10 / A13 / A20 support	Yes	Yes
A23 / A31 support	No	Yes
A80 support	No	WIP
PSCI (hyp / kvm)	No	A20 only
Video output	No	HDMI, LCD & VGA
USB	No	Host & OTG
SATA	No	Yes

Upstream kernel
status

Upstream kernel status

- Februari 2014 we had basic A10, A13, A20 & A31 support: clocks, interrupts, uart & 100mbit eth
- Februari 2015 we have gained support for:
 - 1G ethernet, USB host (OHCI & EHCI), SATA (AHCI)
 - A23 SoCs, IR, tablet-keys, resistive touchscreens
- MMC, so now we can simply boot a sdcard img, as supported by Fedora 21 and Debian 8
- Simplefb, using the framebuffer setup by u-boot, giving us video output on all SoCs except A8x
- Basic A80 support

U-boot roadmap

U-boot roadmap



- New SoC support comes in 3 steps:
 - 1) Get u-boot.bin going, this requires uart & mmc support. This uses Allwinner's boot0 binary to initialize DRAM and then load u-boot.bin
 - 2) Figure out clock and PMIC initialization, reverse engineer DRAM init (no docs), replace boot0 with SPL
 - 3) Add support for Ethernet, USB, video out, etc.
- A33 Support
 - Seem to be very similar to the A23, but uses a different DRAM controller :|

U-boot roadmap

- A80 support
 - Step 1 is complete
 - Can talk to the PMIC, but there are 2 of them and it is not clear yet which voltage is hooked up to what
 - DRAM controller looks significantly different from previous models :|
- A83 support
 - Nothing is known of the A83 yet, other than that it exists

Kernel roadmap

Kernel roadmap

- Real soon now:
 - A10 / A13 / A20 cpufreq support
 - A80 USB & mmc support
 - DMA controller driver
 - A10 / A13 / A20 Audio codec support
 - A10 / A20 ps2 driver
- WIP:
 - NAND support
 - Hardware crypto engine support
 - AXP221 PMIC driver

Kernel roadmap

- Planned
 - USB OTG support (Hans de Goede)
 - KMS driver (Boris Brezillon)

Questions ?



Contact:

hdegoede@redhat.com

Git repositories:

<https://github.com/jwrdegoede>

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