t=0x8d594a0 [0,0]

Contents: [Dobrica PavlinuÅ¡iÄ 's random unstructured stuff]

dove-bootlog.txt

Xtreme PC LXD8541

Chip PC Linux-based Thinx OS

Product Specifications Xtreme PC LXD8541

Processor â ¢ Marvell Dove, Armada 510 800MHZ
https://www.kernel.org/doc/html/v5.14/arm/marvell.html#dove-family-application-processor

Memory â ¢ 1GB, DDR3 @ 800MHz

Mass Storage â ¢ 2GB, High reliability eMMC NAND flash â ¢ Optional externally accessed MicroSD slot

Display Support â ¢ One DVI-I port
â ¢ Display Data Control (DDC) for automatic setting of resolution and refresh rate

Resolutions â ¢ Single: Up to 1920x1200 Pixels @ true color (32 bit)
â ¢ Dual: Up to 1920x1080 Pixels @ true color (24 bit)

Video Player â ¢ Various video codecs, including: DivX HD, H.264 (MPEG4), WMV9/VC1
â ¢ Up to 1080p local browser Flash support

Audio Support â ¢ High Definition Audio Codec
â ¢ Stereo Audio Output - 3 mm (1/8 inch) Audio-Out Jack; 16-bit Stereo, 96KHz

sample rate
â ¢ Microphone Input - 3 mm (1/8 inch), 8 bit
â ¢ Software volume / mute control

Input / Output ports â ¢ 6 x USB 2.0 ports (2 front, 4 back)

serial

https://forum.doozan.com/read.php?2,67954,76099#msg-76099

Koen Re: Debian on Chip PC LXD8941 January 04, 2019 02:33PM

Inside there is both a 4 pin and a 6 pin header. The 4 pin is the UART connection. With the power button towards you and the DVI connection away from you the connections are as follows: GND, TX, RX, VCC (from left to right).

kernel

Linux Kernel 6.6.2 MVEBU package and Debian armhf rootfs

https://forum.doozan.com/read.php?2,32146

```
mkfs.ext3 -L rootfs /dev/sda1
mount /dev/sda1 /mnt/sda1/
cd /mnt/sda1/
tar xvf /nuc/armada/Debian-6.6.2-mvebu-tld-1-rootfs-bodhi.tar.bz2
```

3. Create uImage with DTB appended.

```
root@nuc:/mnt/sda1# cd boot/
root@nuc:/mnt/sda1/boot# cp -a uImage uImage.orig
root@nuc:/mnt/sda1/boot# cp -a zImage-6.6.2-mvebu-tld-1 zImage.fdt
root@nuc:/mnt/sda1/boot# cat dts/dove-chip-lxd8941.dtb >> zImage.fdt
root@nuc:/mnt/sda1/boot# mkimage -A arm -O linux -T kernel -C none -a 0x00008000 -e 0x00008000 -n
Image Name:   Linux-6.6.2-mvebu-tld-1
Created:      Tue Dec 19 18:00:34 2023
Image Type:   ARM Linux Kernel Image (uncompressed)
Data Size:    5193798 Bytes = 5072.07 KiB = 4.95 MiB
Load Address: 00008000
Entry Point:  00008000
```

insert usb stick into back 4 usb ports, front 2 won't find storage device on usb

abort u-boot over serial and issue boot from usb:

```
setenv bootargs console=ttyS0,115200 root=LABEL=rootfs rootdelay=10 ${mtdparts} earlyprintk=seria
usb start; ext2load usb 0:1 0x3000000 /boot/uImage; ext2load usb 0:1 0x4000000 /boot/uInitrd
bootm 0x3000000 0x4000000
```

video output

DRM and framebuffer are not currently (as of 6.6) supported in upstream kernel according to messages at
forum, but dove-chip-lxd8941.dts doesn't include lcd power and dove-hp-t5335z.dts does.

Let's try to boot with this dts but this does not work.

u-boot enviroment

fw_printenv

```
root@dove:~# cat /etc/fw_env.config
# MTD device name       Device offset   Env. size       Flash sector size       Number of sectors
/dev/mtd1 0x000000 0x010000
```

setup boot from usb

```
root@dove:~# fw_setenv bootusb 'setenv bootargs console=ttyS0,115200 root=LABEL=rootfs rootdelay=

root@dove:~# fw_printenv bootcmd
bootcmd=run bootmmc
root@dove:~# fw_setenv bootcmd bootusb
```

fw_setenv this doesn't work from booted debian system, re-try over serial on u-boot prompt:

```
MIC>> printenv usbboot
usbboot=usb start; sleep 3; ext2load usb 0:1 0x2000000 /boot/uImage; run usbargs;bootm 0x2000000
MIC>> setenv usbboot 'setenv bootargs console=ttyS0,115200 root=LABEL=rootfs rootdelay=10 ${mtdpa
MIC>> printenv usbboot
usbboot=setenv bootargs console=ttyS0,115200 root=LABEL=rootfs rootdelay=10 ${mtdparts} earlyprin
MIC>> saveenv
Saving Environment to SPI Flash...
Erasing 0xc0000 - 0xd0000:      [Done]
Writing to SPI flash:           [Done]

MIC>> setenv bootcmd run usbboot
MIC>> saveenv
Saving Environment to SPI Flash...
Erasing 0xc0000 - 0xd0000:      [Done]
Writing to SPI flash:           [Done]
```

power button

seemes like it's on gpio 25

```
apt install gpiod

root@dove:/home/dpavlin# gpioget 0 0 1 2 3 4 5 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
1 0 1 1 0 0 0 0 1 1 1 0 1 0 0 0 0 1 0 1 0 0 0 0 0 0
root@dove:/home/dpavlin# gpioget 0 0 1 2 3 4 5 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
1 0 1 1 0 0 0 0 1 1 1 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0

root@dove:/home/dpavlin# gpiomon 0 25
event: FALLING EDGE offset: 25 timestamp: [    1466.369262333]
event: FALLING EDGE offset: 25 timestamp: [    1466.632278096]
event:  RISING EDGE offset: 25 timestamp: [    1467.188375662]
event:  RISING EDGE offset: 25 timestamp: [    1468.390585489]
event: FALLING EDGE offset: 25 timestamp: [    1470.143645190]
```

```
event:  RISING EDGE offset: 25 timestamp: [    1471.752436499]
event: FALLING EDGE offset: 25 timestamp: [    1473.233499601]
event:  RISING EDGE offset: 25 timestamp: [    1474.560678725]
```