13. References

- U-boot commands

References

- BeagleBoard
  - ▶ Official website: here
  - ▶ Embedded System Conference: here
  - ▶ Blog: beagle intern: here
  - ▶ BeagleBoard on facebook: here
  - ▶ BeagleBoard on twitter: here
  - ▶ BeagleBoard on flickr: here

- Embededed Linux Wiki: here
  - ▶ Android on OMAP: here
  - ▶ BeagleBoard: here
  - ▶ BeagleBoard FAQ: here
  - ▶ BeagleBoard contest: here
  - ▶ BeagleBoard recovery: here

- OMAPpedia: here
  - ▶ OMAP Bootloader: here
  - ▶ OMAP Angstrom: here

- Texas Instruments wiki: here

13. References

- U-boot commands

U-boot: basics

- To get help

  `help`
- To set a variable

  `setenv variable 'value'`
- To see predefined variables

  `printenv`
- To execute a variable as a command

  `run ${variable}`
- To save the variables into the NAND

  `saveenv`
- To boot

  `boot`

U-boot: replacing MLO and U-boot

- To erase completely the NAND

  ```
  nand erase
  ```
- To replace MLO (and its 4 backup copies)

  ```
  mmc init
  fatload mmc 0 0x82000000 MLO
  nandecc hw
  nand write 0x82000000 0 20000
  nand write 0x82000000 20000 20000
  nand write 0x82000000 40000 20000
  nand write 0x82000000 60000 20000
  ```
- To replace U-boot

  ```
  mmc init
  fatload mmc 0 0x82000000 u-boot.bin
  nandecc sw
  nand erase 80000 160000
  nand write 0x82000000 80000 160000
  ```

U-boot changing the bootargs

- To erase the bootargs

  `nand erase 0x260000 20000`

- To save the bootargs in NAND

  `setenv bootargs 'console=ttyS2,115200n8 console=tty0 root=/dev/mmcblk0p2 rw ...'`
  `setenv bootcmd  'mmc init;fatload mmc 0 0x82000000 uImage;bootm 0x82000000'`
  `saveenv`

- To read the bootargs from a file

  `setenv bootcmd  'mmc init;fatload mmc 0 0x82000000 boot.scr; source 0x82000000'`
  `saveenv`

- To create this file *on a x86 linux*
  - ▶ In file `boot.txt`:

    `setenv bootargs 'console=ttyS2,115200n8 console=tty0 root=/dev/mmcblk0p2 rw ...'`
    `setenv bootcmd  'mmc init;fatload mmc 0 0x82000000 uImage;bootm 0x82000000'`
  - ▶ Convertion in file boot.scr with `mkimage` *(see U-boot project)*

    `mkimage -A arm -O linux -T script -C none -a 0 -e 0 -n boot.txt -d boot.txt boot.scr`

U-boot: a more complex example

```
setenv bootdelay 30
setenv loadaddr 0x82000000

setenv console 'console=ttyS2,115200n8 console=tty0'
setenv mpurate '720'
setenv vram '16M'
setenv dvimode 'dvi:1024x768MR-16@50'
setenv defaultdisplay 'dvi'
setenv mem 'mem=99M@0x80000000 mem=128M@0x88000000'
setenv loadbootscript 'fatload mmc 0 ${loadaddr} boot.scr'
setenv bootscript 'echo Running bootscript from mmc ...; source ${loadaddr}'
setenv loaduimage 'fatload mmc 0 ${loadaddr} uImage'

setenv mmcroot '/dev/mmcblk0p2 rw'
setenv mmcrootfstype 'ext3 rootwait'
setenv mmcargs 'setenv bootargs  console=${console}  mpurate=${mpurate} vram=${vram} omapfb.mode=dvi:${dvimode}
               omapdss.def_disp=${defaultdisplay} root=${mmcroot} rootfstype=${mmcrootfstype} ${mem}'
setenv mmcboot 'echo Booting from mmc ...; run mmcargs; bootm ${loadaddr}'

setenv nandroot '/dev/mtdblock4 rw'
setenv nandargs 'setenv bootargs console=${console} mpurate=${mpurate}  vram=${vram} omapfb.mode=dvi:${dvimode}
                omapfb.debug=y omapdss.def_disp=${defaultdisplay} root=${nandroot} rootfstype=${nandrootfstype}'
setenv nandboot 'echo Booting from nand ...; run nandargs; nand read ${loadaddr} 280000 400000; bootm ${loadaddr}'

setenv bootcmd 'if mmc init; then if run loadbootscript; then run bootscript; else
               if run loaduimage; then run mmcboot; else run nandboot; fi; fi; else run nandboot; if'
saveenv
boot
```