

Mango-AM335x LCD Type 커널 Module Parameter 에서 변경하기

<http://www.mangoboard.com/>

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Document History

Revision	Date	Change note
Init	2016-09-27	전종인

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1. 개선 책

LCD에서 종류를 Kernel Module Parameter로 변경하여 , 컴파일을 하지 않고도 ,
LCD를 조정하기
Nand에 u-boot, kernel, 파일 시스템이 있을 때 사용가능

2. Fw_printenv 이용

```
http://elinux.org/U-boot\_environment\_variables\_in\_linux  
https://www.google.co.kr/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#newwindow=1&q=read+and+modify+U-Boot%27s+environment.  
http://processors.wiki.ti.com/index.php/Update\_U-Boot\_Environment\_Variables\_stored\_in\_SPI\_Flash\_from\_Linux
```

u-boot 소스에서 tools/env 디렉토리를 컴파일 하면 됩니다.

컴파일 방법

```
./build_uboot config;./build_uboot
```

```
make -j$CPU_JOB_NUM HOSTCC=${CROSS_COMPILE}gcc  
HOSTSTRIP=${CROSS_COMPILE}strip env
```

"fw_setenv" 명령은 fw_printenv 명령을 복사 또는 Soft link 하면 됩니다.

2.1. Fw.env.config파일 설정

```
# NAND example  
/dev/mtd5          0x0000          0x20000          0x20000          4
```

"fw.env.config" 파일은 파일 시스템에 /etc/ 디렉토리에 복사

테스트 결과

```
[root@(none) ~]# ./fw_setenv crz test  
Read 0x20000 bytes at 0x0 on /dev/mtd5  
Warning: Bad CRC, using default environment  
Writing new environment at 0x0 on /dev/mtd5
```

```
Write 0x20000 bytes at 0x0
[root@(none) ~]# ./fw_printenv
Read 0x20000 bytes at 0x0 on /dev/mtd5
bootcmd=mmc dev ${mmcdev}; if mmc rescan; then echo SD/MMC found on device ${mmcdev};if
run loadbootenv; then echo Loaded environment from ${bootenv};run importbootenv;fi;if test -n
$uenvcmd; then echo Running uenvcmd ...;run uenvcmd;fi;if run loaduimagefat; then run
mmcboot;elif run loaduimage; then run mmcboot;else echo Could not find ${bootfile} ;fi;else run
nandboot;fi;
bootdelay=1
baudrate=115200
arch=arm
cpu=armv7
board=am335x
board_name=am335x
vendor=ti
soc=am33xx
loadaddr=0x80200000
kloadaddr=0x80007fc0
fdtaddr=0x80F80000
fdt_high=0xffffffff
rdaddr=0x81000000
bootfile=uImage
fdtfile=
console=ttyO0,115200n8
optargs=
mtdids=nand0=omap2-nand.0
mtdparts=mtdparts=omap2-
nand.0:128k(SPL),128k(SPL.backup1),128k(SPL.backup2),128k(SPL.backup3),1920k(u-boot),128k(u-boot-
env),5m(kernel),-(rootfs)
dfu_alt_info_mmc=boot part 0 1;rootfs part 0 2;MLO fat 0 1;MLO.raw mmc 100 100;u-boot.img.raw
mmc 300 3C0;u-boot.img fat 0 1;uEnv.txt fat 0 1
dfu_alt_info_emmc=rawemmc mmc 0 3751936
dfu_alt_info_nand=SPL part 0 1;SPL.backup1 part 0 2;SPL.backup2 part 0 3;SPL.backup3 part 0 4;u-
boot part 0 5;kernel part 0 7;rootfs part 0 8
mmcdev=0
mmccroot=/dev/mmcblk0p2 ro
mmccrootfstype=ext3 rootwait
nandroot=ubi0:rootfs rw ubi.mtd=7,2048
```

```

nandrootfstype=ubifs rootwait=1
nandsrcaddr=0x280000
nandimgsize=0x500000
rootpath=/export/rootfs
nfsopts=nolock
static_ip=${ipaddr}:${serverip}:${gatewayip}:${netmask}:${hostname}::off
ramroot=/dev/ram0 rw ramdisk_size=65536 initrd=${rdaddr},64M
ramrootfstype=ext2
ip_method=none
bootargs_defaults=setenv bootargs console=${console} ${optargs}
mmcargs=run          bootargs_defaults;setenv          bootargs          ${bootargs}          root=${mmcroot}
rootfstype=${mmcrootfstype} ip=${ip_method}
nandargs=setenv      bootargs          console=${console}          ${optargs}          root=${nandroot}
rootfstype=${nandrootfstype}
netargs=setenv       bootargs          console=${console}          ${optargs}          root=/dev/nfs
nfsroot=${serverip}:${rootpath},${nfsopts} rw ip=dhcp
bootenv=uEnv.txt
loadbootenv=fatload mmc ${mmcdev} ${loadaddr} ${bootenv}
importbootenv=echo Importing environment from mmc ...; env import -t $loadaddr $filesize
ramargs=setenv       bootargs          console=${console}          ${optargs}          root=${ramroot}
rootfstype=${ramrootfstype}
loadramdisk=fatload mmc ${mmcdev} ${rdaddr} ramdisk.gz
loaduimagefat=fatload mmc ${mmcdev} ${kloadaddr} ${bootfile}
loaduimage=ext2load mmc ${mmcdev}:2 ${kloadaddr} /boot/${bootfile}
mmcboot=echo Booting from mmc ...; run mmcargs; bootm ${kloadaddr}
nandboot=echo Booting from nand ...; run nandargs; nand read ${loadaddr} ${nandsrcaddr}
${nandimgsize}; bootm ${loadaddr}
netboot=echo Booting from network ...; setenv autoload no; dhcp; tftp ${loadaddr} ${bootfile}; run
netargs; bootm ${loadaddr}
ramboot=echo Booting from ramdisk ...; run ramargs; bootm ${loadaddr}
findfdt=if test $board_name = A335BONE; then setenv fdtfile am335x-bone.dtb; fi; if test
$board_name = A33515BB; then setenv fdtfile am335x-evm.dtb; fi; if test $board_name = A335X_SK;
then setenv fdtfile am335x-evmsk.dtb; fi
crz=test

```

3. LCD를 u-boot 환경 변수 (panel) 변경해서 제어

커널 수정

"arch/arm/mach-omap2/board-am335xevm.c"

```
#if 1//CRZ_icanjji crazyboys 20160928
static unsigned int __initdata panel;
static int __init root_panel_setup(char *str)
{
    panel = simple_strtoul(str, NULL, 0);
    MANGO_DBG("panel=%d ,\n",panel);
    return 1;
}
__setup("panel=", root_panel_setup);
#endif
```

```
static void lcdc_init(int evm_id, int profile)
수정
#if 1 //CRZ_icanjji crazyboys 20160928
    MANGO_DBG("panel=%d\n",panel);
    if(panel==1)//5inch
        lcdc_pdata=&INO_EJ050NA_5INCH_pdata;
    else if(panel==2)//7inch press
        lcdc_pdata=&INO_AT070TN94_pdata;
    else if(panel==3)//7inch cap 1024x600
    {
        lcdc_pdata=&INNO_AT070TNA2_pdata;
        ft_touch_init();//crazyboys 20150520
    }
    else if(panel==4)//10.4inch press 800x600
        lcdc_pdata=&INNO_LSA40AT9001_pdata;
    else
    {
        lcdc_pdata=&INNO_LTN101AL03_pdata;
        ft_touch_init();//crazyboys 20150520
    }
}
```

```
./fw_setenv nandargs setenv bootargs console=ttyO0,115200n8 root=ubi0:rootfs rw ubi.mtd=7,2048
```



```
rootfstype=ubifs rootwait=1 panel=2
```

변경 된 것을 확인

```
[root@(none) ~]# ./fw_printenv nandargs
Read 0x20000 bytes at 0x0 on /dev/mtd5
nandargs=setenv bootargs console=ttyO0,115200n8 root=ubi0:rootfs rw ubi.mtd=7,2048
rootfstype=ubifs rootwait=1 panel=2
```

리부팅 합니다.

커널 로그 확인 결과

```
[ 0.000000] Kernel command line: console=ttyO0,115200n8 root=ubi0:rootfs rw ubi.mtd=7,2048
rootfstype=ubifs rootwait=1 panel=1
[ 0.000000] [CRZ] init/do_mounts.c (261) root_dev_setup: ubi0:rootfs
[ 0.000000] [CRZ] init/do_mounts.c (54) readwrite:
[ 0.000000] [CRZ] init/do_mounts.c (270) rootwait_setup:
[ 0.000000] [CRZ] init/do_mounts.c (45) readonly:
[ 0.000000] [CRZ] arch/arm/mach-omap2/board-am335xevm.c (1978) root_panel_setup:
panel=2 ,
...
da8xx_lcd dc da8xx_lcd.0: GLCD: Found INNO_AT070TN94 panel
```