

Exynos 4210 S5PV310 Android

Transfer image to target

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

<http://cafe.naver.com/embeddedcrazyboys>

Crazy Embedded Laboratory

Document History

| Revision | Date | Change note |
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1. How To Compile

다운로드 :

m310_ics404_mrvl8787_121106.tgz

m310_k315_mrvl8787_121106.tgz

m310_u134_mrvl8787_121106.tgz

m310_ics404_mrvl8787_121106_image.tgz

```
$ mkdir m310_ics404_mrvl8787_121106
$ cd m310_ics404_mrvl8787_121106
$ tar xvf m310_ics404_mrvl8787_121106.tgz
$ tar xvf m310_k315_mrvl8787_121106.tgz
$ tar xvf m310_u134_mrvl8787_121106.tgz
$ tar xvf m310_ics404_mrvl8787_121106_image.tgz
```

1.1. U-boot compile

```
$ cd uboot/
$ ./build_uboot
$ cd ../image/
[kjycrz@kjycrz-64bit image]$ ll
합계 368
drwxrwxr-x 2 kjycrz kjycrz 4096 11월 5 22:22 ./
drwxrwxr-x 7 kjycrz kjycrz 4096 11월 5 22:21 ../
-rwxr--r-- 1 kjycrz kjycrz 16384 11월 5 22:22 bl1ah*
-rwxrwxr-x 1 kjycrz kjycrz 13038 11월 5 22:22 c210_mkbl1*
-rw-rw-r-- 1 kjycrz kjycrz 335780 11월 5 22:22 u-boot.bin
-rwxr--r-- 1 kjycrz kjycrz 95 8월 10 13:10 fastboot-linux.sh*
-rwxr--r-- 1 kjycrz kjycrz 996 7월 29 09:32 m310_bl_writer*
-rw-rw-r-- 1 kjycrz kjycrz 329673 8월 30 15:31 ramdisk-uboot.img
-rwxr--r-- 1 kjycrz kjycrz 5358 7월 29 12:08 sdwriter*
-rw-r--r-- 1 kjycrz kjycrz 157677520 8월 30 15:31 system.img
-rw-r--r-- 1 kjycrz kjycrz 19325436 8월 30 15:31 userdata.img
-rwxrwxr-x 1 kjycrz kjycrz 3599352 9월 2 14:02 zImage*
-rwxrwxr-x 1 kjycrz kjycrz 3574432 6월 4 10:11 zImage_1280*
$ sudo cp tools/mkimage /bin/
```

1.2. Kernel compile

```
$ cd kernel/
```

1.2.1. 7"LCD 1024X600 CAP Touch

```
$ ./build_kernel defconfig mango310_7inch_1024_600_mrvl8787_defconfig
[kjycrz@kjycrz-64bit kernel]$ ./build_kernel defconfig mango310_7inch_1024_600_cap_defconfig
make -j9 mango310_7inch_1024_600_cap_defconfig
  HOSTCC  scripts/basic/fixdep
  HOSTCC  scripts/kconfig/conf.o
  SHIPPED scripts/kconfig/zconf.tab.c
  SHIPPED scripts/kconfig/lex.zconf.c
  SHIPPED scripts/kconfig/zconf.hash.c
  HOSTCC  scripts/kconfig/zconf.tab.o
  HOSTLD  scripts/kconfig/conf
#
# configuration written to .config
#
Total compile time is 0 minutes 2 seconds
```

1.2.2. 7"LCD 800X480 Touch

```
$ ./build_kernel defconfig mango310_7inch_800_480_mrvl8787_defconfig
[kjycrz@kjycrz-64bit kernel]$ ./build_kernel defconfig mango310_defconfig
make -j9 mango310_defconfig
#
# configuration written to .config
#
Total compile time is 0 minutes 1 seconds
```

1.2.3. 10.1"LCD 1280X800 Touch

```
$ ./build_kernel defconfig mango310_10_1_1280_800_mrvl8787_defconfig
./build_kernel defconfig mango310_10_1_1280_800_mrvl8787_defconfig
make -j9 mango310_10_1_1280_800_mrvl8787_defconfig
#
# configuration written to .config
```

```
#
```

```
Total compile time is 0 minutes 1 seconds
```

1.2.4. Mango310 Keyboard Set

```
$ make menuconfig
```

```
System Type ---> Mango Board KEY Select --->
```

```
[ ] MANGO310 KEY
```

```
[ ] MANGO CM-V310 V0.4 KEY
```

```
[ ] MANGO CM-V310 V0.2 KEY
```

```
$ ./build_kernel
```

```
cp -a arch/arm/boot/zImage ../image/zImage
```

```
Total compile time is 1 minutes 38 seconds
```

```
$ cd ../image/
```

```
[kjycrz@kjycrz-64bit image]$ ll
```

```
합계 3884
```

```
drwxrwxr-x 2 kjycrz kjycrz 4096 11월 5 22:34 ./
```

```
drwxrwxr-x 7 kjycrz kjycrz 4096 11월 5 22:21 ../
```

```
-rwxr--r-- 1 kjycrz kjycrz 16384 11월 5 22:22 bl1ah*
```

```
-rwxrwxr-x 1 kjycrz kjycrz 13038 11월 5 22:22 c210_mkbl1*
```

```
-rw-rw-r-- 1 kjycrz kjycrz 335780 11월 5 22:22 u-boot.bin
```

```
-rwxrwxr-x 1 kjycrz kjycrz 599464 11월 5 22:34 zImage*
```

```
-rwxr--r-- 1 kjycrz kjycrz 95 8월 10 13:10 fastboot-linux.sh*
```

```
-rwxr--r-- 1 kjycrz kjycrz 996 7월 29 09:32 m310_bl_writer*
```

```
-rw-rw-r-- 1 kjycrz kjycrz 329673 8월 30 15:31 ramdisk-uboot.img
```

```
-rwxr--r-- 1 kjycrz kjycrz 5358 7월 29 12:08 sdwriter*
```

```
-rw-r--r-- 1 kjycrz kjycrz 157677520 8월 30 15:31 system.img
```

```
-rw-r--r-- 1 kjycrz kjycrz 19325436 8월 30 15:31 userdata.img
```

```
-rwxrwxr-x 1 kjycrz kjycrz 3574432 6월 4 10:11 zImage_1280*
```

1.3. Android compile

```
$ cd android/
```

1.3.1. Tablet or Phone UI 구성

```
$ vi device/samsung/smdkv310/Boardconfig.mk
```

```
## Tablet
```

```
#BOARD_USES_HIGH_RESOLUTION_LCD := true
```

```
## Phone UI
```

```
BOARD_USES_HIGH_RESOLUTION_LCD := false
```

```
$ ./build/envsetup.sh
```

```
$ lunch
```

```
[kjycrz@kjycrz-64bit android]$ ./build/envsetup.sh
```

```
including device/moto/stingray/vendorsetup.sh
```

```
including device/moto/wingray/vendorsetup.sh
```

```
including device/samsung/smdkv310/vendorsetup.sh
```

```
including sdk/bash_completion/adb.bash
```

```
[kjycrz@kjycrz-64bit android]$ lunch
```

You're building on Linux

Lunch menu... pick a combo:

1. full-eng
2. full_x86-eng
3. vbox_x86-eng
4. full_stingray-userdebug
5. full_wingray-userdebug
6. full_smdkv310-userdebug
7. full_smdkv310-eng

Which would you like? [full-eng] 7

```
=====
```

```
PLATFORM_VERSION_CODENAME=REL
```

```
PLATFORM_VERSION=4.0.3
```

```
TARGET_PRODUCT=full_smdkv310
```

```
TARGET_BUILD_VARIANT=userdebug
```

```
TARGET_BUILD_TYPE=release
```

```
TARGET_BUILD_APPS=
```

```
TARGET_ARCH=arm
```

```
TARGET_ARCH_VARIANT=armv7-a-neon
```

```
HOST_ARCH=x86
```

```
HOST_OS=linux
HOST_BUILD_TYPE=release
BUILD_ID=IML74K
=====
```

```
$ sudo apt-get install libncurses5-dev:i386
```

```
[kjycrz@kjycrz-64bit android]$ sudo apt-get install libncurses5-dev:i386
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
제안하는 패키지:
  ncurses-doc:i386
다음 패키지를 지울 것입니다:
  libncurses5-dev
다음 새 패키지를 설치할 것입니다:
  libncurses5-dev:i386
0개 업그레이드, 1개 새로 설치, 1개 제거 및 15개 업그레이드 안 함.
218 k바이트 아카이브를 받아야 합니다.
이 작업 후 174 k바이트의 디스크 공간이 비워집니다.
계속 하시겠습니까 [Y/n]? Y
받기:1 http://kr.archive.ubuntu.com/ubuntu/ precise/main libncurses5-dev i386 5.9-4 [218 kB]
내려받기 218 k바이트, 소요시간 0초 (1,273 k바이트/초)
(데이터베이스 읽는중 ...현재 264781개의 파일과 디렉터리가 설치되어 있습니다.)
libncurses5-dev 패키지를 지우는 중입니다 ...
Selecting previously unselected package libncurses5-dev:i386.
(데이터베이스 읽는중 ...현재 264743개의 파일과 디렉터리가 설치되어 있습니다.)
libncurses5-dev:i386 패키지를 푸는 중입니다 (.../libncurses5-dev_5.9-4_i386.deb에서) ...
libncurses5-dev:i386 (5.9-4) 설정하는 중입니다 ...
```

```
$ ./build_android.sh
```

```
$ cp out/target/product/smdkv310/*.img ../image/
```

```
$ cd ../image/
```

```
[kjycrz@kjycrz-64bit image]$ ll
합계 177080
drwxrwxr-x 2 kjycrz kjycrz    4096 11월  6 10:17 ./
drwxrwxr-x 7 kjycrz kjycrz    4096 11월  5 22:21 ../
-rwxr--r-- 1 kjycrz kjycrz   16384 11월  5 22:22 bl1ah*
-rwxrwxr-x 1 kjycrz kjycrz   13038 11월  5 22:22 c210_mkbl1*
-rw-rw-r-- 1 kjycrz kjycrz  329677 11월  6 10:17 ramdisk-uboot.img
```

```

-rw-r--r-- 1 kjycrz kjycrz 157685712 11월 6 10:17 system.img
-rw-rw-r-- 1 kjycrz kjycrz 335780 11월 5 22:22 u-boot.bin
-rw-r--r-- 1 kjycrz kjycrz 19325436 11월 6 10:17 userdata.img
-rwxrwxr-x 1 kjycrz kjycrz 3599464 11월 5 22:34 zImage*
-rwxr--r-- 1 kjycrz kjycrz 95 8월 10 13:10 fastboot-linux.sh*
-rwxr--r-- 1 kjycrz kjycrz 996 7월 29 09:32 m310_bl_writer*
-rwxr--r-- 1 kjycrz kjycrz 5358 7월 29 12:08 sdwriter*
-rwxrwxr-x 1 kjycrz kjycrz 3574432 6월 4 10:11 zImage_1280*

```

1.4. Image Fusing

```

[kjycrz@kjycrz-64bit image]$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
/dev/sda1        28835836    6952540 20418516 26% /
udev             1995284         4 1995280 1% /dev
tmpfs            801636       7608 794028 1% /run
none             5120          0 5120 0% /run/lock
none            2004088        76 2004012 1% /run/shm
/dev/sda2       922788748 490973492 384940276 57% /home
/dev/sdb1        7814144         32 7814112 1% /media/9016-4EF8

```

```
$ sudo ./m310_bl_writer sdb 310
```

```
[kjycrz@kjycrz-64bit image]$ sudo ./m310_bl_writer sdb 310
```

```
[sudo] password for kjycrz:
```

```
Unmount Auto Mount Demon :
```

```
Write mango310 BL1 : 32+0 레코드 들어옴
```

```
32+0 레코드 나감
```

```
16384 바이트 (16 kB) 복사됨, 0.447219 초, 36.6 kB/초
```

```
success
```

```
Write mango310 Uboot : 655+1 레코드 들어옴
```

```
655+1 레코드 나감
```

```
335780 바이트 (336 kB) 복사됨, 0.108346 초, 3.1 MB/초
```

```
success
```

```
U-Boot 2010.12 (Sep 02 2012 - 13:52:33) for CRZ Mango310
```

CPU: S5PV310 [Samsung SOC on SMP Platform Base on ARM CortexA9]

APLL = 1000MHz, MPLL = 800MHz

DRAM: 2 GiB

0x11000120=0x222222

before SROM_BW_REG=0x39

SROM_BW_REG=0x339

Checking Boot Mode ... SDMMC

NAND: 0 MiB

MMC Device 0: 7639 MB

MMC Device 1 not found

*** Warning - using default environment

Net: smc911x-0

Hit any key to stop autoboot: 0

Mango310 #

Mango310 # fdisk -c 0; fatformat mmc 0:1;fastboot

fdisk is completed

| partition # | size(MB) | block start # | block count | partition_Id |
|-------------|----------|---------------|-------------|--------------|
| 1 | 6581 | 2019600 | 13479300 | 0x0C |
| 2 | 306 | 137700 | 627300 | 0x83 |
| 3 | 306 | 765000 | 627300 | 0x83 |
| 4 | 306 | 1392300 | 627300 | 0x83 |

Start format MMC&d partition&d ...

Partition1: Start Address(0x1ed110), Size(0xcdad84)

size checking ...

Under 8G

write FAT info: 32

Fat size : 0x336b

Erase FAT region.....

Partition1 format complete.

[Partition table on MoviNAND]

ptn 0 name='fwbl1' start=0x8 len=N/A (use hard-coded info. (cmd: movi))

ptn 1 name='bl2' start=N/A len=N/A (use hard-coded info. (cmd: movi))

ptn 2 name='bootloader' start=N/A len=N/A (use hard-coded info. (cmd: movi))

ptn 3 name='tzsw' start=N/A len=N/A (use hard-coded info. (cmd: movi))

```
ptn 4 name='kernel' start=N/A len=N/A (use hard-coded info. (cmd: movi))
ptn 5 name='ramdisk' start=N/A len=0x6800(~27262976KB) (use hard-coded info. (cmd: movi))
ptn 6 name='system' start=0x433C800 len=0x4C932(~321177600KB)
ptn 7 name='userdata' start=0x17589000 len=0x4C932(~321177600KB)
ptn 8 name='cache' start=0x2A7D5800 len=0x4C932(~321177600KB)
ptn 9 name='fat' start=0x3DA22000 len=0x66D6C2(~-1688532992KB)
OTG cable Connected!
```

```
$ sudo fastboot flash kernel zImage
$ sudo fastboot flash ramdisk ramdisk-uboot.img
$ sudo fastboot flash system system.img
$ sudo fastboot -w
```

```
Mango310 # setenv bootcmd 'movi read kernel 0 40008000;movi read rootfs 0 41000000 100000
Mango310 # bootm 40008000 41000000';setenv bootargs "console=ttySAC1,115200n8
androidboot.console=ttySAC1"
Mango310 # saveenv
Mango310 # reset
```