(S5PV210) Mango210 Qt4 Filesystem 포팅 가이드
베이스 소스
buildroot-2012.05 ,
kernel : 3.0.8

8GB MMC Card 준비 (테스트 Transcend 8GB 6 Class)
PC Linux PC 에 삽입
[root@HP-note-jji sdwriter]# **df**

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/sda5	115345960	12046528	97440104	12%	/
udev	886452	12	886440	1%	/dev
tmpfs	358104	900	357204	1%	/run
none	5120	0	5120	0%	/run/lock
none	895260	76	895184	1%	/run/shm
/dev/sdb2	**231808**	**147592**	**84216**	**64%**	**/media/57f8f4bc-abf4-655f-bf67-946fc0f9f25b**
/dev/sdb1	**7019508**	**37488**	**6982020**	**1%**	**/media/0000-3333**
/dev/sdb4	**103328**	**4152**	**93844**	**5%**	**/media/af681c35-4e43-ba0f-26dc-92a8ff743183**
/dev/sdb3	**354284**	**75728**	**260268**	**23%**	**/media/64f2d0be-02cd-6e99-a1a7-0d747940ac4e**
192.168.0.113:/home/icanjji/work/	1746752512	629174272	1030156288	38%	/media/113

"df" 명령으로 파티션 확인

[root@HP-note-jji sdwriter]# **sudo ./sdwriter sdb 210**
Mango SD Writer V1.0

Unmount all : success

Partition Create : success

Write Mango210 BL1 : success
Write Mango210 Uboot : success
Write Mango210 Kernel : success

Android Filesystem Create : success

Gnome Filesystem Create : success

Unmount all : success

Success

How to Compile
$ cd uboot/
$ ./ build_uboot

커널
$ ./build_kernel defconfig mango210_10_1inch_mrvl8787_defconfig
$ ./build_kernel

build root 컴파일

[icanjji@crz-server113 buildroot-2012.05]$ cp mango210_defconfig .config
[icanjji@crz-server113 buildroot-2012.05]$ ./build_rootfs.sh

부팅 모드는 SD Boot 모드로 합니다.
2,3번 On

Linux tool 복사

image₩bl1_image₩
에
cp smdk-usbdl /bin/

u-boot Write 방법
u-boot 실행 후
MANGO210 # dnw 21000000 ; movi write u-boot 21000000

Host PC에서 (Linux)
[root@HP-note-jji sdwriter]# smdk-usbdl -f u-boot.bin -a 21000000

kernel Write 방법
u-boot 터미널 창에서
MANGO210 # dnw 21000000 ; movi write kernel 21000000

Host PC (Linux)

[root@HP-note-jji sdwriter]# smdk-usbdl -f zImage -a 21000000

u-boot에서 환경 설정

setenv bootcmd 'movi read kernel 20008000;bootm 20008000'
setenv bootargs "root=/dev/mmcblk0p2 rootfstype=ext3 console=ttySAC1,115200 rootwait"

부팅 합니다.

Qt4 example 테스트 방법

터치 테스트 방법
부팅 후
cat /proc/bus/input/devices
I: Bus=0019 Vendor=0001 Product=0001 Version=0100
N: Name="gpio-keys"
P: Phys=gpio-keys/input0
S: Sysfs=/devices/platform/gpio-keys.0/input/input0
U: Uniq=
H: Handlers=kbd event0
B: PROP=0
B: EV=3
B: KEY=10000 40000000

I: Bus=0018 Vendor=0000 Product=0000 Version=0000
N: Name="s3c_ts"
P: Phys=
S: Sysfs=/devices/virtual/input/input1
U: Uniq=

H: Handlers=kbd mouse0 event1
B: PROP=0
B: EV=b
B: KEY=400 0 4 0 2000000 0 40000800 c0040 0 0 0
B: ABS=2650000 1000003

export QWS_MOUSE_PROTO="tslib:/dev/input/event1”
export TSLIB_TSEVENTTYPE=INPUT
export TSLIB_TSDEVICE=/dev/input/event1
export TSLIB_CALIBFILE=/etc/pointercal
export TSLIB_CONFFILE=/etc/ts.conf
export TSLIB_PLUGINDIR=/usr/lib/ts
export LD_LIBRARY_PATH=/usr/lib:/lib
export QWS_SIZE=1280*800
export QWS_DISPLAY=Transformed:Rot270:VNC:LinuxFb
보정 방법
ts_calibrate

cat /etc/pointercal

66319 480 -1649264 -227 66371 -291440 65536 1280 80080 800

/usr/share/qt/examples/touch/pinchzoom/pinchzoom –qws
수행하면 됩니다.

디스플레이 관련 (Rotation)

export QWS_DISPLAY=Transformed:Rot270:VNC:LinuxFb

화면 로테이션 관련

Buildroot에서

qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq Graphics drivers

qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x Arrow keys navigate the menu. <Enter> selects submenus --->. Highlighted letters are x
x hotkeys. Pressing <Y> selectes a feature, while <N> will exclude a feature. Press x
x <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] feature is selected [ ] x
x feature is excluded x
x
lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk x
x x [*] Linux Framebuffer x x
x x [*] Transformed x x
x x [*] Qt Virtual Framebuffer x x
x x [*] VNC x x
x x [*] multiscreen x x
x x *** directfb Qt driver not available (need directfb) ***

을 configuration합니다.

I recompiled qt-embedded with the option

-qt-gfx-transformed

and when I launch the application I use the command

./myapp -qws -display transformed:Rot90

디버깅

커널에
include/linux/input.h:#define EV_VERSION 0x010000
에 정의가 되어 있다.
하지만, buildroot는 EV_VERSION이 0x010001

이다.

커널을 3.0.8 로 업그레이드 했다.

커널에서 10.1" 드라이버를 수정을 했다.
"drivers/input/touchscreen/mango_ft5x06_ts.c"

static void ft5x0x_report_value(void) 함수에서 추가
.....
if (event->touch_point) {
input_report_abs(data->input_dev, ABS_X, event->au16_x[0]);
input_report_abs(data->input_dev, ABS_Y, event->au16_y[0]);
}

input_sync(data->input_dev);

if (event->touch_point == 0) {
ft5x0x_ts_release();
return ;
}

}
####
static int
ft5x0x_ts_probe(struct i2c_client *client, const struct i2c_device_id *id)
{
...
set_bit(KEY_VOLUMEDOWN, ft5x0x_ts->input_dev->keybit);
/* For single touch */// CRZ
input_set_abs_params(input_dev, ABS_X, 0, SCREEN_MAX_X, 0, 0);
input_set_abs_params(input_dev, ABS_Y, 0, SCREEN_MAX_Y, 0, 0);

#####
부팅 시 자동으로 환경 설정 위해서 파일 시스템에
/etc/profile.d
에 만들자

Qt_config.sh 이름으로 다시 만들자

mkdir /etc/profile.d
vi /etc/profile.d/Qt_config.sh

```
#!/bin/sh
echo "Qt4 TSlib Environment Start"
echo "----------------------------"
export QWS_MOUSE_PROTO="tslib:/dev/input/event1"
export TSLIB_TSEVENTTYPE=INPUT
export TSLIB_TSDEVICE=/dev/input/event1
export TSLIB_CALIBFILE=/etc/pointercal
export TSLIB_CONFFILE=/etc/ts.conf
export TSLIB_PLUGINDIR=/usr/lib/ts
export LD_LIBRARY_PATH=/usr/lib:/lib
export QWS_SIZE=1280*800
export QWS_DISPLAY=Transformed:Rot270:VNC:LinuxFb
```

chmod 755 /etc/profile.d/Qt_config.sh

리부팅 후 이상없이 동작한다.

```
mango210 login: root
Qt4 TSlib Environment Start
----------------------------
# env
HISTFILESIZE=1000
INPUTRC=/etc/inputrc
TSLIB_TSDEVICE=/dev/input/event1
USER=root
HOSTNAME=mango210
LD_LIBRARY_PATH=/usr/lib:/lib
TSLIB_TSEVENTTYPE=INPUT
HOME=/root
QWS_SIZE=1280*800
```

PAGER=/bin/more
PS1=#
TSLIB_PLUGINDIR=/usr/lib/ts
LOGNAME=root
TERM=vt100
PATH=/bin:/sbin:/usr/bin:/usr/sbin:/usr/bin/X11:/usr/local/bin
TSLIB_CONFFILE=/etc/ts.conf
DMALLOC_OPTIONS=debug=0x34f47d83,inter=100,log=logfile
HISTSIZE=1000
SHELL=/bin/sh
QWS_DISPLAY=Transformed:Rot270:VNC:LinuxFb
PWD=/root
TSLIB_CALIBFILE=/etc/pointercal
QWS_MOUSE_PROTO=tslib:/dev/input/event1
EDITOR=/bin/vi