

## 1. 카드 라이팅 방법

sd카드를 sd카드 리더기에 꽂고 컴퓨터에 삽입

dmesg |tail 로 sd카드 리더기 확인

```
root@ubuntu-desktop:/home/dsc/image# dmesg |tail
[26338.142022] sd 11:0:0:0: [sdb] Write Protect is off
[26338.142026] sd 11:0:0:0: [sdb] Mode Sense: 03 00 00 00
[26338.142771] sd 11:0:0:0: [sdb] No Caching mode page found
[26338.142775] sd 11:0:0:0: [sdb] Assuming drive cache: write through
[26338.146021] sd 11:0:0:0: [sdb] No Caching mode page found
[26338.146025] sd 11:0:0:0: [sdb] Assuming drive cache: write through
[26338.147603] sdb: sdb1 sdb2
[26338.150644] sd 11:0:0:0: [sdb] No Caching mode page found
[26338.150648] sd 11:0:0:0: [sdb] Assuming drive cache: write through
[26338.150652] sd 11:0:0:0: [sdb] Attached SCSI removable disk
root@ubuntu-desktop:/home/dsc/image#
```

sdb인 것을 확인 할 수 있다.

```
root@ubuntu-desktop:/home/dsc# cd image/
root@ubuntu-desktop:/home/dsc/image# ll
total 91732
drwxrwxr-x 5 ubuntu ubuntu 4096 Jan 9 15:04 ./
drwxr-xr-x 3 ubuntu ubuntu 4096 Jan 9 15:02 ../
-rwxr--r-- 1 ubuntu ubuntu 8192 Jan 9 15:03 bli.bin*
-rwxr--r-- 1 ubuntu ubuntu 12309 Jul 10 2010 bmp_reader*
-rwxr-xr-x 1 ubuntu ubuntu 20034 Dec 19 2012 crz-usbdl*
drwxrwxr-x 4 ubuntu ubuntu 4096 Apr 23 2013 custom_datafs/
-rwxr--r-- 1 ubuntu ubuntu 152 Mar 7 2013 custom_datafs_make.sh*
-rw-rw-r-- 1 ubuntu ubuntu 112640 Apr 23 2013 custom_datafs.tar
-rwxr--r-- 1 ubuntu ubuntu 1024 Aug 22 2012 m24r2_signature*
-rwxr--r-- 1 ubuntu ubuntu 6401 Aug 22 2012 mkbli*
drwxrwxr-x 17 ubuntu ubuntu 4096 Apr 23 2013 rootfs_mmc/
-rw-rw-r-- 1 ubuntu ubuntu 89559040 Dec 5 16:56 rootfs_mmc.tar
drwxrwxr-x 2 ubuntu ubuntu 4096 Jan 9 16:28 rs485_app_130418/
-rwxr--r-- 1 ubuntu ubuntu 4447 Mar 6 2013 sdwriter*
-rwxr--r-- 1 ubuntu ubuntu 4293 Dec 4 16:45 sdwriter_sdhc*
-rwxrwxr-x 1 ubuntu ubuntu 233552 Nov 6 16:37 u-boot.bin*
-rwxrwxr-x 1 ubuntu ubuntu 235848 Nov 6 16:05 u-boot.bin-24r2*
-rwxr--r-- 1 ubuntu ubuntu 251 Apr 18 2013 woamupgrade.sh*
-rwxrwxr-x 1 ubuntu ubuntu 3681948 Dec 5 17:01 zImage*
root@ubuntu-desktop:/home/dsc/image#
```

cd image

하면 sdwriter, sdwriter\_sdhc가 있습니다.

sdwriter --> 2G 이하 SD card 용 스크립트

sdwriter\_sdhc --> SDHC SD card 용 스크립트 입니다.

Root File system까지 Fusing하는 방법은

```
$ sudo ./sdwriter sdb 24 all
```

```
$ sudo ./sdwriter_sdhc sdb 24 all
```

uboot, Kernel만 Fusing하는 방법은

```
$ sudo ./sdwriter sdb 24 bin
```

```
$ sudo ./sdwriter_sdhc sdb 24 bin
```

아래는 실제 dsc-s3c2416-mrvl8787\_131205\_image.tgz파일을 압축을 풀고 sd카드에 라이팅하는 사진 입니다.

```
tar xvf dsc-s3c2416-mrvl8787_131205_image.tgz
```

```
cd image/
```

```
sudo ./sdwriter_sdhc sdb 24 all
```

```
root@ubuntu-desktop:/home/dsc/image# ./sdwriter_sdhc sdb 24 all
Mango SD Writer V1.0
  TFLASH_SECTORS: 15644672
  START_ROOTFS=13529086

Unmount all : success

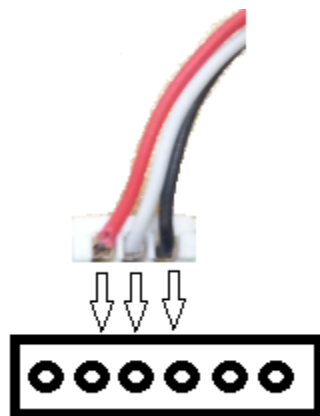
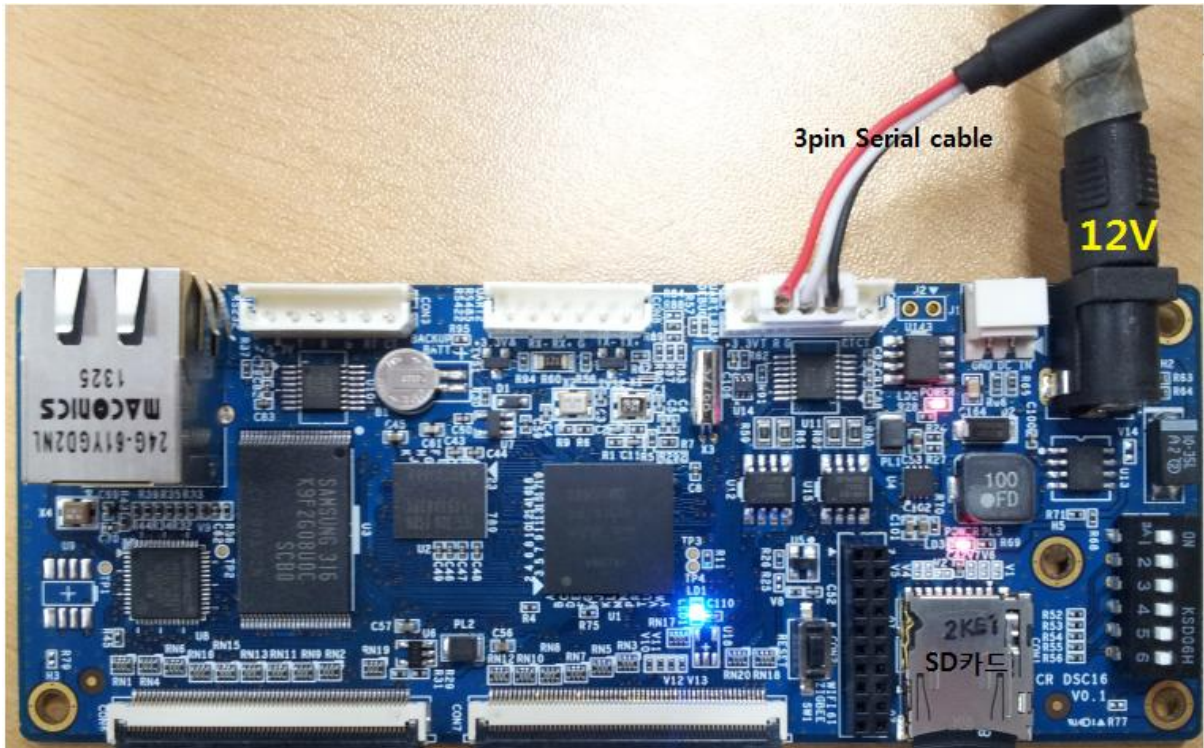
Partition Create : success

Write Mango24R2 Signature OFFSET_SIGNATURE_24: 15643646 success
  OFFSET_BL1: 15643630 Write Mango24R2 BL1 : success
  OFFSET_BL2: 15642574 Write Mango24R2 Uboot : success
  OFFSET_KERNEL: 15632334 Write Mango24 Kernel : success

Linux Filesystem Create :
success

Unmount all : success

Success
root@ubuntu-desktop:/home/dsc/image#
```



3PIN cable 꽂는 방법

컴파일 방법

1. u-boot

스크립트에서 INSTALL\_BINDIR 부분은 적절히 수정 필요

\$ ./build\_uboot\_clean --> Clean을 위한 스크립트

\$ ./build\_uboot config --> configuration

\$ ./build\_uboot --> 빌드를 위한 스크립트

Sudo ./build\_uboot를 했는데 아래와 같은 에러가 난다.

```
ubuntu@ubuntu-desktop:/home/dsc/uboot$ sudo ./build_uboot
```

```
[sudo] password for ubuntu:
make -j5
make: arm-none-linux-gnueabi-gcc: Command not found
for dir in tools examples api_examples ; do make -C $dir _depend ; done
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/tools'
make[1]: Nothing to be done for `_depend'.
make[1]: Leaving directory `/home/dsc/uboot/tools'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
make[1]: Nothing to be done for `_depend'.
make[1]: Leaving directory `/home/dsc/uboot/examples'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/api_examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
make[1]: Nothing to be done for `_depend'.
make[1]: Leaving directory `/home/dsc/uboot/api_examples'
make -C tools all
make -C examples all
make -C api_examples all
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/tools'
make[1]: Entering directory `/home/dsc/uboot/examples'
make -C cpu/s3c24xx start.o
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/api_examples'
make -C lib_generic/
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/cpu/s3c24xx'
```

```
dirname: missing operand
Try `dirname --help' for more information.
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/lib_generic'
make[1]: Leaving directory `/home/dsc/uboot/tools'
make -C cpu/s3c24xx/
arm-none-linux-gnueabi-gcc -g -Os -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float
-mfloat-abi=soft -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float -D__KERNEL__ -
DTEXT_BASE=0xc3e00000 -I/home/dsc/uboot/include -fno-builtin -ffreestanding -nostdinc -
isystem -pipe -DCONFIG_ARM -D__ARM__ -march=armv5t -mabi=apcs-gnu -Wall -Wstrict-
prototypes -c -o hello_world.o hello_world.c
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: *** [hello_world.o] Error 127
make[1]: Leaving directory `/home/dsc/uboot/examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
make: *** [examples] Error 2
make: *** Waiting for unfinished jobs....
arm-none-linux-gnueabi-gcc -g -Os -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float
-mfloat-abi=soft -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float -D__KERNEL__ -
DTEXT_BASE=0xc3e00000 -I/home/dsc/uboot/include -fno-builtin -ffreestanding -nostdinc -
isystem -pipe -DCONFIG_ARM -D__ARM__ -march=armv5t -mabi=apcs-gnu -Wall -Wstrict-
prototypes -c -o bzlib.o bzlib.c
arm-none-linux-gnueabi-gcc -D__ASSEMBLY__ -g -Os -fno-strict-aliasing -fno-common -
ffixed-r8 -msoft-float -mfloat-abi=soft -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float
-D__KERNEL__ -DTEXT_BASE=0xc3e00000 -I/home/dsc/uboot/include -fno-builtin -ffreestanding -
nostdinc -isystem -pipe -DCONFIG_ARM -D__ARM__ -march=armv5t -mabi=apcs-gnu -c -o
start.o start.S
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: *** [bzlib.o] Error 127
make[1]: Leaving directory `/home/dsc/uboot/lib_generic'
make: *** [lib_generic/libgeneric.a] Error 2
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: *** [start.o] Error 127
make[1]: Leaving directory `/home/dsc/uboot/cpu/s3c24xx'
```

```
make: *** [cpu/s3c24xx/start.o] Error 2
arm-none-linux-gnueabi-ar crv libglue.a
make[1]: arm-none-linux-gnueabi-ar: Command not found
make[1]: *** [libglue.a] Error 127
make[1]: Leaving directory `/home/dsc/uboot/api_examples'
make: *** [api_examples] Error 2
make: *** wait: No child processes. Stop
```

무슨 에러인지 확인이 필요하다.

인터넷을 찾아보니 권한 문제일 수도 있다고 한다.

./build\_ubuntu clean하고 chmod -R 0755 TARGET\_DIRECTORY를 해서 권한을 설정했다.

다시 ./build\_ubuntu config하고 ./build\_ubuntu하니 조금 다른 에러가 뜬다.

```
root@ubuntu-desktop:/home/dsc/uboot# ./build_uboot config
make -j5 mango2450_config
Configuring for mango2450 board...
Total compile time is 0 minutes 0 seconds
root@ubuntu-desktop:/home/dsc/uboot# ./build_uboot
make -j5
make: arm-none-linux-gnueabi-gcc: Command not found
Generating include/autoconf.mk.dep
/bin/sh: 4: arm-none-linux-gnueabi-gcc: not found
Generating include/autoconf.mk
/bin/sh: 4: arm-none-linux-gnueabi-gcc: not found
for dir in tools examples api_examples ; do make -C $dir _depend ; done
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/tools'
make[1]: Leaving directory `/home/dsc/uboot/tools'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/tools'
make[1]: Nothing to be done for `_depend'.
make[1]: Leaving directory `/home/dsc/uboot/tools'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
```

```
Try `dirname --help' for more information.
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
make[1]: *** No rule to make target `.depend', needed by `_depend'. Stop.
make[1]: Leaving directory `/home/dsc/uboot/examples'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/api_examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
dirname: missing operand
Try `dirname --help' for more information.
make[1]: Nothing to be done for `_depend'.
make[1]: Leaving directory `/home/dsc/uboot/api_examples'
make -C tools all
make -C examples all
make -C api_examples all
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/tools'
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/examples'
make -C cpu/s3c24xx start.o
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/api_examples'
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
make -C lib_generic/
dirname: missing operand
Try `dirname --help' for more information.
/bin/sh: 1: arm-none-linux-gnueabi-gcc: not found
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/cpu/s3c24xx'
dirname: missing operand
Try `dirname --help' for more information.
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: Entering directory `/home/dsc/uboot/lib_generic'
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o img2srec.o
img2srec.c
arm-none-linux-gnueabi-gcc -g -Os -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float
-mfloat-abi=soft -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float -D__KERNEL__ -
DTEXT_BASE=0xc3e00000 -I/home/dsc/uboot/include -fno-builtin -ffreestanding -nostdinc -
```





```
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
make[1]: *** No rule to make target `depend', needed by `libgeneric.a'. Stop.
make[1]: Leaving directory `/home/dsc/uboot/lib_generic'
make: *** [lib_generic/libgeneric.a] Error 2
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o crc32.o crc32.c
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
arm-none-linux-gnueabi-gcc -D__ASSEMBLY__ -g -Os -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float -mfloat-abi=soft -fno-strict-aliasing -fno-common -ffixed-r8 -msoft-float -D__KERNEL__ -DTEXT_BASE=0xc3e00000 -I/home/dsc/uboot/include -fno-builtin -ffreestanding -nostdinc -isystem -pipe -DCONFIG_ARM -D__ARM__ -march=armv5t -mabi=apcs-gnu -c -o start.o start.S
make[1]: arm-none-linux-gnueabi-gcc: Command not found
make[1]: *** [start.o] Error 127
make[1]: Leaving directory `/home/dsc/uboot/cpu/s3c24xx'
make: *** [cpu/s3c24xx/start.o] Error 2
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o image.o image.c
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o md5.o md5.c
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o sha1.o sha1.c
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o fdt.o fdt.c
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter
```

```
/home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o fdt_ro.o fdt_ro.c
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter
/home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o fdt_rw.o fdt_rw.c
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter
/home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o fdt_strerror.o
fdt_strerror.c
gcc -g -Wall -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter
/home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o fdt_wip.o fdt_wip.c
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o envcrc.o
envcrc.c
gcc -g -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -idirafter
/home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -c -o environment.o
environment.c
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o ubsha1.o
ubsha1.c
gcc -g -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o
gen_eth_addr.o gen_eth_addr.c
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -c -o
bmp_logo.o bmp_logo.c
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o img2srec
img2srec.o
bmp_logo.c: In function 'main':
bmp_logo.c:71: warning: ignoring return value of 'fread', declared with attribute
warn_unused_result
bmp_logo.c:73: warning: ignoring return value of 'fread', declared with attribute
warn_unused_result
bmp_logo.c:75: warning: ignoring return value of 'fread', declared with attribute
warn_unused_result
bmp_logo.c:77: warning: ignoring return value of 'fread', declared with attribute
warn_unused_result
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o mkimage
mkimage.o crc32.o image.o md5.o sha1.o fdt.o fdt_ro.o fdt_rw.o fdt_strerror.o fdt_wip.o
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
```

```

idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o envcrc
envcrc.o crc32.o environment.o sha1.o
strip img2srec
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o ubsha1
ubsha1.o sha1.o
strip mkimage
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o
gen_eth_addr gen_eth_addr.o
gcc -Wall -pedantic -idirafter /home/dsc/uboot/include -idirafter /home/dsc/uboot/include2 -
idirafter /home/dsc/uboot/include -DTEXT_BASE=0xc3e00000 -DUSE_HOSTCC -O -o bmp_logo
bmp_logo.o
strip gen_eth_addr
strip bmp_logo
./bmp_logo logos/denx.bmp >/home/dsc/uboot/include/bmp_logo.h
make[1]: Leaving directory `/home/dsc/uboot/tools'
root@ubuntu-desktop:/home/dsc/uboot#

```

참고로 ubuntu 12.04 리눅스에서는 다음 명령으로 쉽게 /usr/bin/arm-linux-gnueabi-gcc를 설치할 수 있습니다.

```
$ sudo apt-get install gcc-arm-linux-gnueabi
```

우선 Y를 눌러서 설치를 완료했습니다.

음 이래도 안됩니다.

```
/bin/sh: 3: arm-none-linux-gnueabi-gcc: not found
```

이게 문제 인 것 같습니다.

Vi build\_uboot를 해서 보니

```

#!/bin/sh

export ARCH=arm
export CROSS_COMPILE=arm-none-linux-gnueabi-
export PATH=/opt/arm-2010-q1/bin:$PATH

INSTALL_BINDIR=../image/

```

PATH부분에 /opt/arm-2010-q1/bin:\$PATH 이라고 있습니다.

확인해보니 arm-2009-q3안에 arm-none-linux-gnueabi이 있습니다.

PATH를

```
export PATH=/opt/arm-2009-q3/bin:$PATH
```

위와 같이 바꾸고

\$ ./build\_uboot\_clean --> Clean을 위한 스크립트

\$ ./build\_uboot config --> configuration

\$ ./build\_uboot --> 빌드를 위한 스크립트

순서대로 하니 잘됩니다.

Total compile time is 0 minutes 17 seconds

또는

기존 설정되어 있는 틀체인을 받아도 됩니다.

cd /opt

wget https://sourcery.mentor.com/sgpp/lite/arm/portal/package6488/public/arm-none-linux-gnueabi/arm-2010q1-202-arm-none-linux-gnueabi-i686-pc-linux-gnu.tar.bz2

tar xf arm-2010q1-202-arm-none-linux-gnueabi-i686-pc-linux-gnu.tar.bz2

해주셔도 됩니다.

빌드를 마치면 자동으로 ../image 폴더에 u-boot.bin이 복사됩니다.

```
root@ubuntu-desktop: /home/dsc/image# ll
total 91732
drwxrwxr-x 5 ubuntu ubuntu 4096 Jan 21 11:29 ./
drwxr-xr-x 5 ubuntu ubuntu 4096 Jan 20 20:01 ../
-rwxr--r-- 1 ubuntu ubuntu 8192 Jan 9 15:03 bli.bin*
-rwxr--r-- 1 ubuntu ubuntu 12309 Jul 10 2010 bmp_reader*
-rwxr-xr-x 1 ubuntu ubuntu 20034 Dec 19 2012 crz-usbdl*
drwxrwxr-x 4 ubuntu ubuntu 4096 Apr 23 2013 custom_datafs/
-rwxr--r-- 1 ubuntu ubuntu 152 Mar 7 2013 custom_datafs_make.sh*
-rw-rw-r-- 1 ubuntu ubuntu 112640 Apr 23 2013 custom_datafs.tar
-rwxr--r-- 1 ubuntu ubuntu 1024 Aug 22 2012 m24r2_signature*
-rwxr--r-- 1 ubuntu ubuntu 6401 Aug 22 2012 mkbl1*
drwxrwxr-x 17 ubuntu ubuntu 4096 Apr 23 2013 rootfs_mmc/
-rw-rw-r-- 1 ubuntu ubuntu 89559040 Dec 5 16:56 rootfs_mmc.tar
drwxrwxr-x 2 ubuntu ubuntu 4096 Jan 9 16:28 rs485_app_130418/
-rwxr--r-- 1 ubuntu ubuntu 4447 Mar 6 2013 sdwriter*
-rwxr--r-- 1 ubuntu ubuntu 4293 Dec 4 16:43 sdwriter_sdhc*
-rwxr-xr-x 1 root root 234900 Jan 21 11:22 u-boot.bin*
-rwxrwxr-x 1 ubuntu ubuntu 235848 Nov 6 16:05 u-boot.bin-24r2*
-rwxr--r-- 1 ubuntu ubuntu 251 Apr 18 2013 wooamupgrade.sh*
-rwxrwxr-x 1 ubuntu ubuntu 3681948 Dec 5 17:01 zImage*
root@ubuntu-desktop: /home/dsc/image#
```

위와 같이 오늘 날짜로 따끈따끈하게 생성된 파일을 확인할 수 있다.

\$ vi ./include/configs/mango2450.h

```
#define CONFIG_BOOT_MOVINAND --> SD 카드로 부팅시 사용
#define CONFIG_BOOT_NAND --> NAND로 부팅시 사용
2. kernel
```

스크립트에서 INSTALL\_BINDIR 부분은 적절히 수정 필요

```
$ ./build_kernel clean--> Clean을 위한 스크립트
$ ./build_kernel defconfig dsc_2416_defconfig
$ ./build_kernel--> 빌드를 위한 스크립트
```

```
Total compile time is 3 minutes 15 seconds
```

위와 같이 잘 되는 것을 확인하였습니다.

빌드를 마치면 자동으로 ../image 폴더에 zImage가 복사됩니다.

### 3. buildroot

```
$ build_rootFS.sh --> 빌드를 위한 스크립트
$ build_rootFS_clean.sh --> Clean을 위한 스크립트
```

```
src/udev-builtin-input_id.c: In function 'test_key':
src/udev-builtin-input_id.c:165: error: 'BTN_TRIGGER_HAPPY' undeclared (first use in this function)
src/udev-builtin-input_id.c:165: error: (Each undeclared identifier is reported only once
src/udev-builtin-input_id.c:165: error: for each function it appears in.)
make[3]: *** [src/src_udevadm-udev-builtin-input_id.o] Error 1
make[3]: *** Waiting for unfinished jobs....
make[2]: *** [all-recursive] Error 1
make[1]: *** [all] Error 2
make[1]: Leaving directory `/home/dsc/buildroot-2012.02/output/build/udev-181'
make: *** [/home/dsc/buildroot-2012.02/output/build/udev-181/.stamp_built] Error 2
Copy build image
cp: cannot stat `./output/images/rootfs.tar': No such file or directory
Total compile time is 50 minutes 56 seconds
```

buildroot 컴파일 시 틀체인 변경 후 에러 발생 시 조치 입니다.

,

udev-builtin-input\_id.c 에서  
'BTN\_TRIGGER\_HAPPY' undeclared 에러 발생

vi ./output/build/udev-182/src/udev-builtin-input\_id.c

```
#include "udev.h"

#ifndef BTN_TRIGGER_HAPPY
#define BTN_TRIGGER_HAPPY 0x2c0
#endif

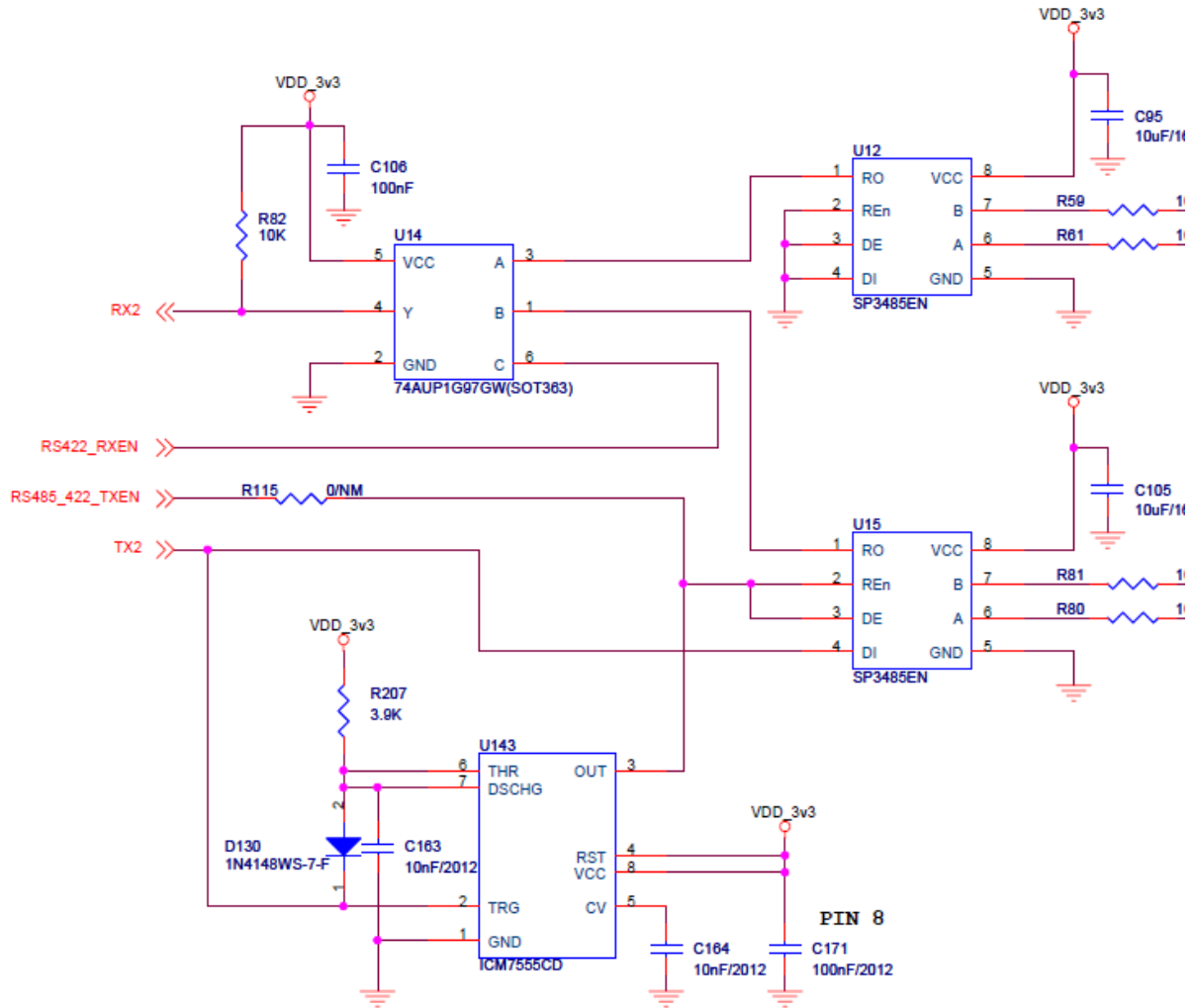
/* we must use this kernel-compatible implementation */
#define BITS_PER_LONG (sizeof(unsigned long) * 8)
```

위와 동일하게 변경합니다.

빌드를 마치면 output/images/rootfs.tar가 있습니다.  
자동으로 ./image 폴더에 rootfs.tar가 복사됩니다.

## RS485/422 테스트 방법

## RS-485



U15가 485쪽 입니다. RX쪽 74AUP1G97GW칩의 게이트를 보게 되면 아래와 같습니다.  
 C로 A를 받을꺼지, B를 받을 꺼지, 선택할수 있는 것입니다.  
 고로, RS485로 하려면, C가 0이어야 하고, RS422을 받으려면 C가 1이어야 합니다.

### 5. Functional diagram

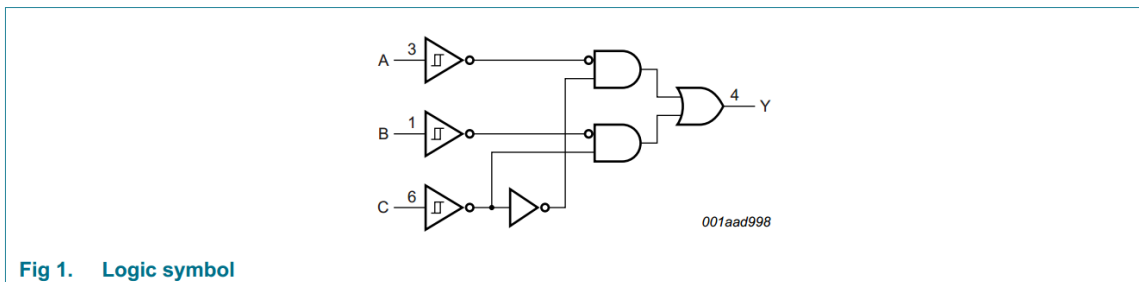
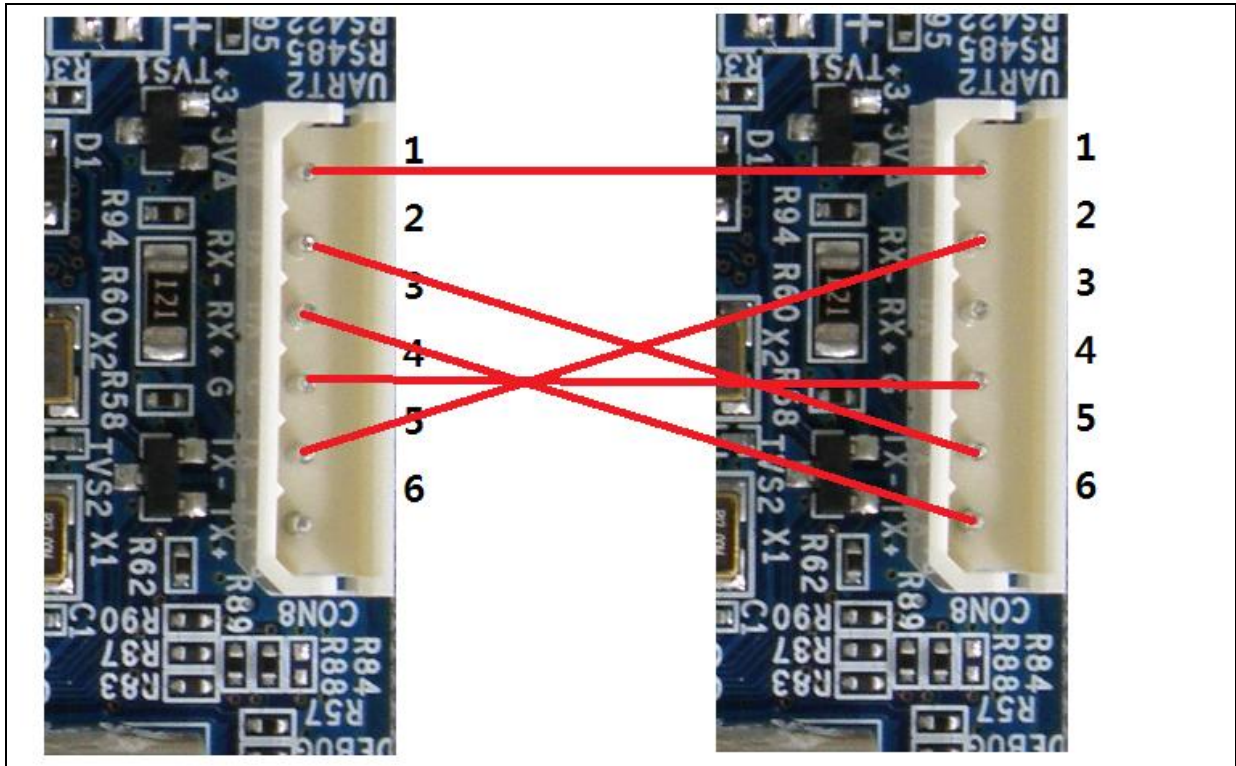


Fig 1. Logic symbol

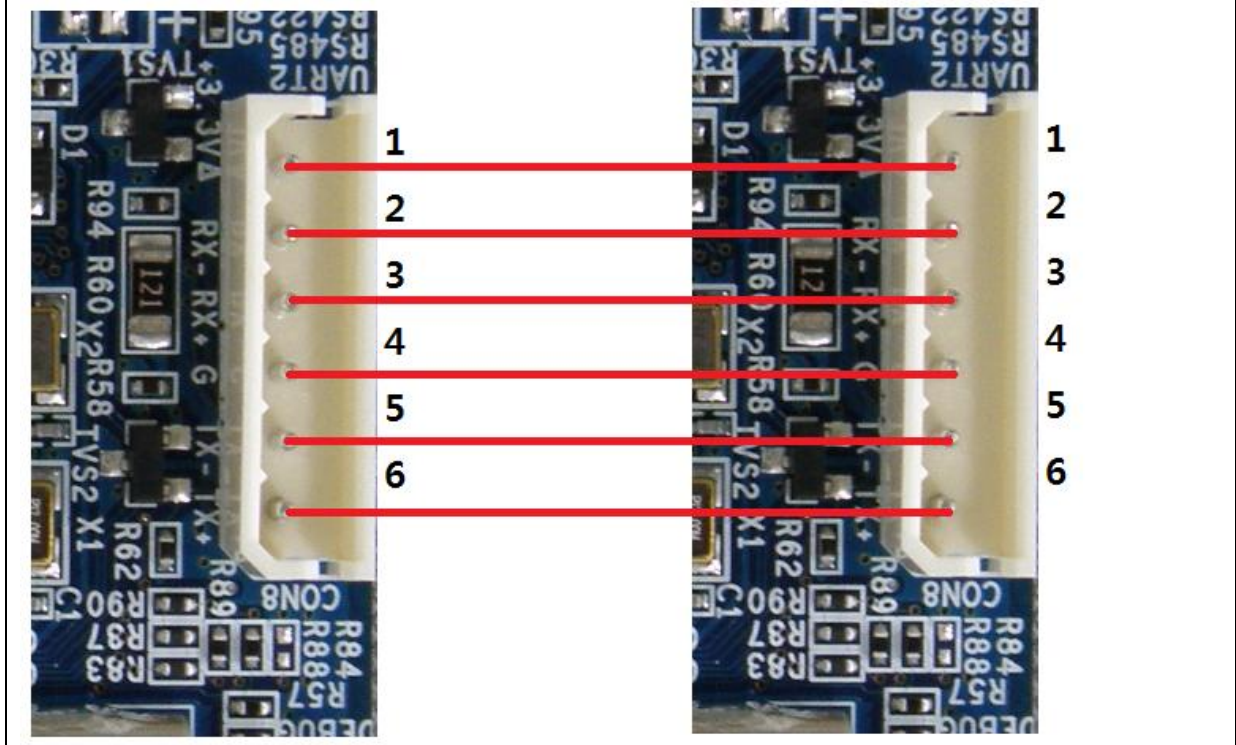
그 의 맞게 RS485 테스트 소스 수정 합니다.

1) 핀 연결 확인 (422)





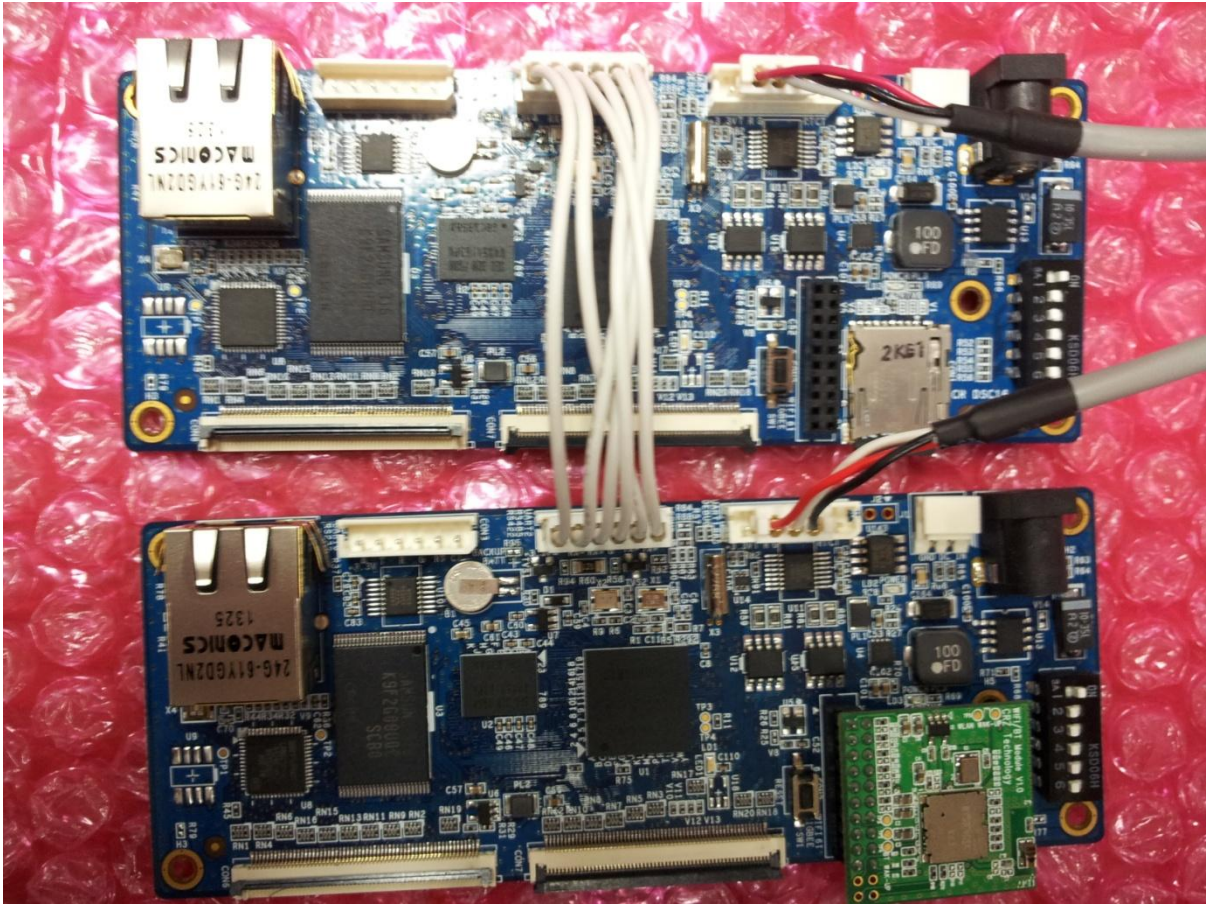
2) 핀 연결 확인 (485)



스위치는 둘 다 1번만 On하시면 됩니다. 이외의 버튼은 조작할 필요가 없습니다.

아래 케이블은 422 케이블 연결한 것 입니다.

422용 485용 케이블 두개 제작되어 있습니다.



르ㅇㅇㅇㅇㅇ

### RS485 테스트

보드1	보드2
<pre># ./rs485_test 485 9600 /dev/ttySAC2 Send Message : Received read_message : 0x61: a Received read_message : 0x61: a Received read_message : 0x61: a Received read_message : 0x6e: n Received read_message : 0x62: b0x76: v Received read_message : 0x61: a Received read_message : 0x78: x Received read_message : 0x63: c Received read_message : 0x76: v Received read_message : 0x6e: n Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73:</pre>	<pre># ./rs485_test 485 9600 /dev/ttySAC2 Send Message : a Send Message : a Send Message : n Send Message : bv Send Message : a Send Message : x Send Message : c Send Message : v Send Message : n Send Message : asdf Send Message : asdf Send Message : Received read_message : 0x61: a0x73:</pre>

s0x64: d0x66: f asdfg Send Message : asdf Send Message : asdf Send Message : asdf Send Message : asdf Send Message : asdf Send Message : asdf Send Message : asdf Send Message : a Send Message : a Send Message : a Send Message : a Send Message : s Send Message : d Send Message : f Send Message : g Send Message : a Send Message : s Send Message : d	s0x64: d0x66: f0x67: g Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a0x73: s0x64: d0x66: f Received read_message : 0x61: a Received read_message : 0x61: a Received read_message : 0x61: a Received read_message : 0x61: a Received read_message : 0x73: s Received read_message : 0x64: d Received read_message : 0x66: f Received read_message : 0x67: g Received read_message : 0x61: a Received read_message : 0x73: s Received read_message : 0x64: d
---	--

<RS485 테스트 명령>

./rs485\_test 485 9600 /dev/ttySAC2

<RS422 테스트 명령>

./rs485\_test 422 9600 /dev/ttySAC2

./rs422\_test 9600 /dev/ttySAC2 [Full]

