

Mango-IMX6Q eMMC 5.0

테스트

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

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


Crazy Embedded Laboratory

Document History

Revision	Date	Change note
Init	2016-07-22	전종인

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1. Mango-IMX6Q eMMC 5.0 테스트

Serial Number	Chip Band	Result	
KLM8G1GEND-B031 	Samsung		

테스트 결과 아래와 같이 에러가 발생한다.

```
mmc2: unrecognised EXT_CSD revision 7
mmc2: error -22 whilst initialising MMC card
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```

Patch를 해 보자.

커널 소스에서 수정합니다.

"drivers/mmc/core/mmc.c"

```
//if (card->ext_csd.rev > 6) {
//CRZ_icanjji crazyboys 20160722 eMMC 5.0 support
    if (card->ext_csd.rev > 7) {
        pr_err("%s: unrecognised EXT_CSD revision %d\n",
                mmc_hostname(card->host), card->ext_csd.rev);
        err = -EINVAL;
        goto out;
    }
}
```

수정 후 커널에서 인식 완료

```
mmc2: BKOPS_EN bit is not set
mmc2: new high speed DDR MMC card at address 0001
mmcblk2: mmc2:0001 8GND3R 7.28 GiB
```

```
mmcblk2boot0: mmc2:0001 8GND3R partition 1 4.00 MiB
mmcblk2boot1: mmc2:0001 8GND3R partition 2 4.00 MiB
mmcblk2rpm: mmc2:0001 8GND3R partition 3 512 KiB
mmcblk2: unknown partition table
mmcblk2boot1: unknown partition table
mmcblk2boot0: unknown partition table
```

테스트

```
# fdisk -c /dev/mmcblk2
```

Welcome to fdisk (util-linux 2.24.1).

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Device does not contain a recognized partition table.

Created a new DOS disklabel with disk identifier 0xea47db6.

Command (m for help): p

Disk /dev/mmcblk2: 7.3 GiB, 7818182656 bytes, 15269888 sectors

Units: sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disklabel type: dos

Disk identifier: 0xea47db6

Command (m for help): n

Partition type:

p primary (0 primary, 0 extended, 4 free)

e extended

Select (default p): p

Partition number (1-4, default 1): 1

First sector (2048-15269887, default 2048):

Last sector, +sectors or +size{K,M,G,T,P} (2048-15269887, default 15269887):

Created a new partition 1 of type 'Linux' and of size 7.3 GiB.

Command (m for help): p

Disk /dev/mmcbk2: 7.3 GiB, 7818182656 bytes, 15269888 sectors

Units: sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disklabel type: dos

Disk identifier: 0xeea47db6

Device	Boot Start	End	Blocks	Id	System
/dev/mmcbk2p1	2048	15269887	7633920	83	Linux

Command (m for help): w

The partition table has been altered.

Calling ioctl() to re-read partition table.

mmcbk2: p1

Syncing disks.

```
# mkfs.ext4 /dev/mmcbk2p1
```

```
mke2fs 1.42.9 (28-Dec-2013)
```

```
Discarding device blocks: done
```

```
Filesystem label=
```

```
OS type: Linux
```

```
Block size=4096 (log=2)
```

```
Fragment size=4096 (log=2)
```

```
Stride=0 blocks, Stripe width=0 blocks
```

```
477664 inodes, 1908480 blocks
```

```
95424 blocks (5.00%) reserved for the super user
```

```
First data block=0
```

```
Maximum filesystem blocks=1954545664
```

```
59 block groups
```

```
32768 blocks per group, 32768 fragments per group
```

```
8096 inodes per group
```

```
Superblock backups stored on blocks:
```

```
32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632
```

Allocating group tables: done

Writing inode tables: done

Creating journal (32768 blocks): done

Writing superblocks and filesystem accounting information: done

root@imx6qsabresd:~# mount /dev/mmcbk2p1 emmc5.0/

EXT4-fs (mmcbk2p1): mounted filesystem with ordered data mode. Opts: (null)

root@imx6qsabresd:~# df

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/root	3339208	1067116	2102468	34%	/
devtmpfs	898832	4	898828	1%	/dev
tmpfs	40	0	40	0%	/mnt/.psplash
tmpfs	1030080	212	1029868	1%	/run
tmpfs	1030080	104	1029976	1%	/var/volatile
/dev/mmcbk3p1	511720	7856	503864	2%	/media/mmcbk3p1
/dev/mmcbk2p1	7382888	16764	6968044	1%	/home/root/emmc5.0

<Write 테스트 >

```
# dd if=/dev/zero of=/dev/mmcbk2 bs=4096 count=200k
204800+0 records in
204800+0 records out
838860800 bytes (839 MB) copied, 15.42 s, 54.4 MB/s
```

<Read 테스트 >

```
# dd if=/dev/mmcbk2p1 of=/dev/zero bs=4096 count=200k
204800+0 records in
204800+0 records out
838860800 bytes (839 MB) copied, 15.5713 s, 53.9 MB/s
```