AM335X 之 NAND 分区

一、UBoot 分区相关

1.uboot 版本：2013.10

2.板级配置文件：/include/configs/am335x_evm.h

3.nand 相关配置：

```
/* NAND support */
#ifdef CONFIG_NAND
……
#else
#define NANDARGS ""
#endif /* !CONFIG_NAND */
```

其中具体与分区有关及修改内容如下：

```
/* djf 20151127 change del start */
/*
  #define MTDPARTS_DEFAULT                  "mtdparts=nand.0:" \
                                    "128k(NAND.SPL)," \
                                    "128k(NAND.SPL.backup1)," \
                                    "128k(NAND.SPL.backup2)," \
                                    "128k(NAND.SPL.backup3)," \
                                    "256k(NAND.u-boot-spl-os)," \
                                    "1m(NAND.u-boot)," \
                                    "128k(NAND.u-boot-env)," \
                                    "128k(NAND.u-boot-env.backup1)," \
                                    "8m(NAND.kernel)," \
                                    "-(NAND.rootfs)"
*/
/* djf    20151127 change del end */
/*djf 20151127 change add start */
 #define MTDPARTS_DEFAULT                   "mtdparts=nand.0:" \
                                    "2m(NAND.SPL)," \
                                    "2m(NAND.SPL.backup1)," \
                                    "2m(NAND.SPL.backup2)," \
                                    "2m(NAND.SPL.backup3)," \
                                    "2m(NAND.u-boot)," \
                                    "2m(NAND.u-boot-env)," \
                                    "8m(NAND.kernel)," \
                                    "-(NAND.rootfs)"
/* djf 20151127 change add end */
  #undef CONFIG_ENV_IS_NOWHERE
  #define CONFIG_ENV_IS_IN_NAND
/* djf 20151127 change del start */
/*
```

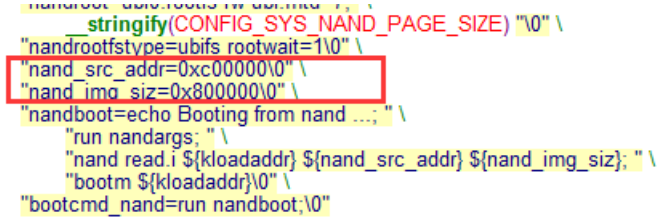
```
   #define CONFIG_ENV_OFFSET              0x001C0000
   #define CONFIG_ENV_OFFSET_REDUND       0x001E0000
*/
/* djf 20151127 change del end */

/* djf 20151127 change add start */

   #define CONFIG_ENV_OFFSET              0x00a00000
   #define CONFIG_ENV_OFFSET_REDUND       0x00c00000

/* djf 20151127 change add end */
   #define CONFIG_SYS_ENV_SECT_SIZE       CONFIG_SYS_NAND_BLOCK_SIZE
#endif
/* NAND: SPL related configs */
#if !defined(CONFIG_SPI_BOOT) && !defined(CONFIG_NOR_BOOT) && \
      !defined(CONFIG_EMMC_BOOT)
   #define CONFIG_SPL_NAND_AM33XX_BCH
   #define CONFIG_SPL_NAND_SUPPORT
   #define CONFIG_SPL_NAND_BASE
   #define CONFIG_SPL_NAND_DRIVERS
   #define CONFIG_SPL_NAND_ECC
   #define CONFIG_SYS_NAND_U_BOOT_START       CONFIG_SYS_TEXT_BASE
/* dragoniye modify
   #define CONFIG_SYS_NAND_U_BOOT_OFFS        0x000C0000
*/
/* djf 20151127 change
      #define CONFIG_SYS_NAND_U_BOOT_OFFS     0x00080000
*/
#define CONFIG_SYS_NAND_U_BOOT_OFFS     0x00800000
```

注：需修改的共三部分：CONFIG_ENV_OFFSET_REDUND 为默认的分区架构；CONFIG_ENV_OFFSET 和 CONFIG_ENV_OFFSET_REDUND 为环境变量的地址；CONFIG_SYS_NAND_U_BOOT_OFFS 为 uboot.img 的地址。

4.配置文件中还包含有其它文件：

```
#include <configs/ti_am335x_common.h>    -->
#include <configs/ti_armv7_common.h>
```

该文件中也需要修改，见下图：



红框中两个值分别对应 nand 中 ubi.img 的地址和分区大小。

至此 uboot 中 nand 分区相关就修改完了，其中分区时要注意最好让每个区都是 nand 的 block 的整数倍。环境变量分区大小不是整数倍的话，在 uboot 下不能使用 saveenv。

二、Kernel 分区相关

1.板级文件：(/arch/arm/mach-omap2/board-am335xevm.c)

2.具体分区：

```
/* NAND partition information */
static struct mtd_partition am335x_nand_partitions[] = {
/* All the partition sizes are listed in terms of NAND block size */
    {
        .name           = "SPL",
        .offset         = 0,            /* Offset = 0x0 */
        .size           = SZ_512K * 4,
    },
    {
        .name           = "SPL.backup1",
        .offset         = MTDPART_OFS_APPEND,/* Offset = 0x200000 */
        .size           = SZ_512K * 4,
    },
    {
        .name           = "SPL.backup2",
        .offset         = MTDPART_OFS_APPEND,/* Offset = 0x400000 */
        .size           = SZ_512K * 4,
    },
    {
        .name           = "SPL.backup3",
        .offset         = MTDPART_OFS_APPEND,/* Offset = 0x600000 */
        .size           = SZ_512K * 4,
    },
    {
        .name           = "U-Boot",
        .offset         = MTDPART_OFS_APPEND,   /* Offset = 0x800000 */
        .size           = 4 * SZ_512K,
    },
    {
        .name           = "U-Boot Env",
        .offset         = MTDPART_OFS_APPEND,   /* Offset = 0xa00000 */
        .size           = 4 * SZ_512K,
    },
    {
        .name           = "Kernel",
        .offset         = MTDPART_OFS_APPEND,   /* Offset = 0xc00000 */
        .size           = 16 * SZ_512K,
    },
```

```
    {
        .name           = "File System",
        .offset         = MTDPART_OFS_APPEND,    /* Offset = 0x1400000 */
        .size           = MTDPART_SIZ_FULL,
    },
};
```

其中宏 SZ_512K 在/include/asm-generic/size.h 中定义：

```
#define SZ_512K                 0x00080000
```

kernel 中的 nand 分区比较简单，前一个分区的首地址加上大小就是后一个分区的首地址，以此类推。